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Working Paper

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A COMMENT ON CBO REPORT

"QUALITY SOLDIERS: COSTS OF MANNING THE ACTIVE ARMY"

Jane Arabian

David Horne

Roy Nord

Edward Schmitz

August 1986

REVIEWED BY:____________________

APPROVED BY: Curtis Gilroy

U.S. Army Research Institute
for the Behavioral and Social Sciences
5001 Eisenhower Avenue, Alexandria VA 22333

I. INTRODUCTION AND BACKGROUND

In its responsibility for national security the Army recruits and trains thousands of individuals each year, with number and quality of recruits determined by both requirements for readiness and available resources. Clearly, a brighter and more highly trained force will require additional resources. The policy question currently under debate is: what level quality of manpower is optimal. Evidence has been presented that demonstrates a relationship between score on the Armed Forces Qualification Test (AFQT) and performance under a number of condition.

This evidence comes from a variety of sources. Commanders in the field, for example, claim a substantial improvement in readiness over the past few years as a result of the higher quality soldiers recruited by the Army. Analyses of both training data and job skill tests, such as those provided in Armor et al. (1982), Defense Manpower Quality (1985), Fernandez and Garfinkle (1985), and Horne (1985) consistently find that soldiers with higher AFQT scores perform better than their lower AFQT counterparts. Research on promotion speed by Nord and Daula (1986) finds individuals with higher test scores are promoted faster, even though test scores are not used by promotion boards. Finally, simulated combat exercises for STINGER antiaircraft missiles (Nelson et al. 1984) and armored tanks (Scribner et al. 1985) have provided strong evidence that quality soldiers are cost-effective.

The argument for high quality recruits is easily made. Today's Army requires the operation and maintenance of equipment and weapons systems that are technologically sophisticated. In almost any likely conflict the Army will have to rely upon the active force for readiness, deterrence, and combat. In mobilization, the active force will be called upon to provide the leadership and training base for the total force.

Furthermore, soldiers in combat are likely to encounter a battlefield dominated by technological innovations, situations requiring effective decision making, and the ability to improvise and quickly learn new skills. Technically sophisticated equipment is likely to increase the more difficult trouble-shooting tasks and require high quality maintainers.

The Army, recognizing the importance of manpower quality, has made a commitment to maintain the quality of soldiers it is presently recruiting. However, a recent report by the Congressional Budget Office (1986) which expresses concern over the Army's ability to sustain such success at an acceptable cost suggests the Army's program has two principal drawbacks: (1) the Army's program is not representative of the youth population, and (2) the Army program is not cost effective.

The implication of the first point is that the Army's purpose is not national security but rather a social program with other goals. Representation only becomes an issue in a long-term mobilization scenario. This argument appears spurious and is not addressed in this comment. The second criticism is discussed in the following section.

II. COST-EFFECTIVENESS ISSUES

There are three parts to the cost-effectiveness issue: (1) the cost of the Congressional Budget Office (CBO) alternatives, (2) the cost of the Army alternatives, and (3) the productivity of the enlisted force. The specific arguments on each issue are presented below.

The CBO Alternative Will Cost More Than Estimated

Even if one accepts the CBO's assumptions with respect to quality/performance tradeoffs, attrition, and retention, their alternatives are probably infeasible, and certainly much more costly than estimated in Congressional Budget Office (1986), hereafter referred to as the Report.

All three alternatives proposed by the CBO are, in effect, attempts to show that we can "have our cake and eat it too." Essentially, CBO argues that (a) performance is more strongly related to AFQT score than it is to high school degree status, and (b) the attrition costs associated with increased AFQT I-IIIA non-graduate accessions are more than offset by the lower recruiting costs and increased retention rates among this group. As a result, all three alternatives propose substantial increases in I-IIIA non-graduate recruits, offset by fewer I-IIIA graduates, and in two out of three cases, promise an equal or higher I-IIIA percentage in the career force than that which would (by their reckoning) be obtained under the Army's 65% AFQT I-IIIA option.

If (a) is true (and it probably is) then these two alternatives would result in an equal or superior career force than that resulting from the more conservative of the two Army alternatives; and if (b) is true this force could be obtained at a substantially lower cost. (The implicit argument that the increased I-IIIA percentage offered by the Army 69% alternative is not worth the price, and/or that the reduced career-force quality provided under the CBO three-year-cut option is cost effective, relies on additional assumptions, the flaws in which are discussed below).

Tables 1-3 provide the basis for the argument that the CBO alternatives would, at best, be more costly than assumed in the Report, and at worst, be virtually impossible to implement. Table 1 provides projections of the AFQT I-IIIA graduate and non-graduate male population through 1993. Table 2 shows National Longitudinal Survey (NLS)-based propensities for 1979-1982. Table 3 compares the penetration rates among non-graduate I-IIIAs implied by the CBO options with those for the Army 65% option. All of the assumptions in Table 3 other than those used to derive population figures and enlistment propensities are CBO assumptions.

Table 3 shows that the most conservative CBO option ("hold the line") implies a 69% increase over the Army program in the rate of recruitment per population among non high school diploma graduate (NHSDG) I-IIIA's by 1991--from 6.1 percent to 10.3 percent. Note also that under the Army program the recruitment per population rates for graduates and non-graduates in this AFQT category is very nearly proportional to the difference in propensities among the two groups (2.8/6.1 vs 12.1/26.8), while the "hold the line" CBO proposal calls for a rate of recruitment among non-graduates of roughly 5 times that among graduates in the face of a ratio of roughly 2-to-1 in propensities. The most extreme CBO proposal would require a 170% increase in the non-graduate penetration rate--a 10-to-1 ratio between the graduate and non-graduate rates. This proposal assumes that by 1993, 1/6 of the entire non-graduate I-IIIA population would be joining the Army. (The graduation rates used in our projections are assumed to remain at 1980 levels.)

If there is any relationship at all between population size, propensity, and recruiting costs, the marginal cost of recruiting a non-graduate I-IIIA at these levels would clearly exceed that of recruiting graduates, let alone the discounted cost for grads resulting from lower attrition rates. It may also be worth noting that, if marginal costs are roughly proportional to propensities, then the Army program is optimal in that the ratio of recruitment rates is (approximately) equal to the ratio of propensities.

The Costs of the Army's Program are Overstated

The CBO Report identifies recruiting, turnover, and enlistment bonuses as the three areas where most of the force cost changes will occur. In each area there is evidence that the assumptions used are questionable and unfavorable to the Army.

The CBO Report shows the Army's recruiting costs rising. This increase is due to increased Army College Fund (ACF) costs. The CBO anticipates all additional high quality personnel will be recruited with enlistment bonuses. In December 1985 Congress prohibited individuals from receiving both bonuses and ACF. Thus, increased ACF costs should be removed from recruiting costs.

Turnover cost differences among proposals appear grossly understated. Baldwin and Daula (1984) demonstrate that, solely on the basis of lower attrition rates, high quality manpower is cost effective. Training costs are very high: costs include not only the expenses for instructors and equipment, but trainee pay. Training costs for MOS 11B (Infantry), for example, are given as $12,000, and the cost for MOS with longer training times will be considerably higher. As Baldwin and Daula note, "it is cheaper to man a force of 1,000 with 31.37 high-quality accessions per month, each costing $16,500 [including recruiting and training costs], than with 40.2 low-quality accessions, each costing $13,200" (p.108). The CBO Report assumes that "In the category of turnover-related costs, about one-half consists of the variable expenses of training recruits: these include civilian salaries, ammunition, and maintenance of installations, but not the salaries of military trainers. CBO estimates these costs average about $1,600 a recruit" (p. 68). Given that the CBO analysis understates true training costs by a <u>minimum</u> of $10,000 and attrition increases by up to 5,400 in the CBO alternatives, then turnover costs are underestimated by over $54 million.

An alternative analysis of the attrition impact would be to examine the proportion of the force that contributes to the operating strength of the force. Even if attrition had no effect on the training base it will reduce the force's operating strength. The higher attrition of the CBO alternatives would substantially reduce the productivity of the force, because far fewer soldiers would be in units.

The CBO study does not state what enlistment bonus elasticities were used to compute bonus costs. This assumption is critical to estimate the costs of enlistment bonuses. Although CBO discusses at considerable length their methodology for such bonuses and identifies the reenlistment pay elasticities that were used, they fail to identify this key parameter.

Also, CBO does not appear to acknowledge the fact that bonuses have been shown to increase quality manyears beyond net enlistments, since bonuses require an additional year of service. In recent research by Polich et al. (1986), the manyear effect of bonuses was 50 to 68 percent greater than the enlistment effect. Bonuses would reduce future quality accession requirements in proportion to the manyear effect.

Finally, CBO dismisses the use of educational benefits as a means to increase quality. But there is considerable evidence that educational benefits may be more cost-effective than bonuses. Both Fernandez (1982) and Brown (1985) found greater quality enlistment effects than those estimated by CBO (1982) from using the discounted present value of benefits. An incentive program comprised of a combination of ACF and bonuses could be much more cost-effective than a program that relies solely on bonuses.

CBO Does Not Properly Link Quality and Productivity

The Report's analysis of the links between recruit quality (specifically AFQT scores) and career force productivity rests on three unsupportable assumptions: (a) that either the contribution of individual quality to unit performance is independent of where in the unit's hierarchy high-quality individuals are located, or experience is a perfect substitute for innate ability; (b) that the elasticity of the value of soldier performance with respect to the "quantity" of soldier performance is 1; and (c) that this elasticity is constant over a soldier's entire career.

The first of these assumptions is implied in the arguments made on pages xvi, 36-37 with respect to the relationship between individual and unit performance. The Scribner et al.(1985) study cited in both places did indeed suggest that tank crew performance was not significantly affected by the AFQT score of the loader and driver. This cannot, however be taken as support for the argument that a unit with a 50-50 mix of low and high-quality soldiers will perform as well as one made up entirely of high-quality personnel. Rather, it shows that units _led_ by high-quality soldiers perform better than those _led_ by low quality soldiers. If the Army were able to recruit leaders (as opposed to "growing" them), this might provide an argument against recruiting large numbers of high-quality soldiers into entry-level jobs. Since this is not the case, and since this study also suggests that it is _quality_ specifically, rather than _experience_ that makes the difference, it does not provide support for a reduction in recruit quality. The other studies cited on both the individual vs. unit performance issue and the question of experience vs. ability fail to address the issue of leadership, and focus instead on the effect of experience on the acquisition of specific skills which, over the course of a soldier's career, become less important than leadership abilities and the capacity to deal effectively with problems that have not previously been faced. Finally, the Rand study cited in support of the role of experience as a performance predictor among tank crews relies on studies previous to the Grafenwoehr analysis where experience had a powerful effect because it served as a proxy for previous exposure to the training course -- i.e., as a proxy for practice on the same test.

The second assumption is implicit in the Report's comparisons of alternative policies that involve tradeoffs between costs and expected performance. The Report ignores the limitations imposed on any analysis of this type by the lack of information about the marginal value of performance. In effect, it notes that the value of performance is not the same as the "quantity" of performance (para. 1, page xviii), and then proceeds with the analysis as if, in the absence of a measure of this value, simple comparisons of changes in marginal costs to changes in marginal output were a reasonable alternative.

An example may illustrate this point. It could be argued that one measure of performance for an aircraft mechanic is the percentage of aircraft which is successful in reaching a given destination. A 99 percent success rate might be considered to be quite low if 1 out of every 100 aircraft were to crash. If all crashes could be eliminated by increasing training time by 2 percent, or by increasing bonuses by 2 percent, this might appear to be cost-effective, particularly if you were required to use these aircraft. By CBO standards such a program would not be cost-effective because the 2 percent increase in cost would be compared to a 1 percent increase in performance, despite the fact that the value of the increase in performance might substantially exceed the absolute increase in cost. The assumption underlying the entire CBO analysis is that a percentage increase in performance can be directly compared to a percentage increase in manpower cost. This assumption is quite weak.

In fact, the lack of a means for transforming marginal performance into marginal value means that the only meaningful comparisons among the costs and benefits of alternative policies are those among policies that are "pareto optimal" and those that are not -- that is, if policy X yields the same or better long-term performance than policy Y and policy X is cheaper, then X can be said to be preferred to Y. On the other hand, if X produces a 1% improvement in performance while Y yields a 2% improvement, but costs ten times as much, then the relative merits of the two policies can not be compared on the basis of their comparative costs, unless one is willing to make strong assumptions about the dollar value of a one-percent change in performance. (The example for aircraft mechanics addresses this point. They are both Pareto optimal.) A reasonable argument can be made that the best information we have on the relative value of the incremental improvements in performance comes from the judgements of commanders in the field, and those judgments are unanimous in their support of more, rather than less, ambitious quality goals.

The third assumption -- that the value of performance is constant across career levels -- is implicit in arguments about the tradeoffs between experience and ability. The point here is that a given increment of performance must, in the absence of strong (and perverse assumptions), be more valuable (or costly) at higher levels within the organization than it is at lower levels. The extent to which a soldier's actions affect the performance of other soldiers increases with rank, as does the costliness of errors. Thus, even if it is true that the relationship between AFQT score and performance diminishes over time, it is entirely possible that the value of that diminishing increment of performance is increasing. It is virtually certain that the reduction in value is less than the reduction in marginal effect.

The argument on page xvii of the Report's Summary relies in a particularly fundamental way on these assumptions. In order for higher recruit quality to lead to a diminution in the performance of the career force, it would have to be true that the ratio of the marginal value of experience to that of quality in the career force be greater than the (absolute value) ratio of the positive effect of increased recruit quality on the quality of the career force to its presumed negative effect on the average experience level of the career force.

TABLE 1

PROJECTED 17-19 YEAR-OLD POPULATION BY
GENDER, AFQT LEVEL, AND HIGH SCHOOL DIPLOMA STATUS

FEMALES		1986	1987	1988	1989	1990	1991	1992	1993
I-IIIA	GRADS	2266.2	2291.1	2332.2	2272.7	2161.7	2029.5	1993.1	1971.1
	NONGR	164.5	166.2	169.1	165.5	158.6	150.3	148.1	146.9
IIIB-V	GRADS	2176.5	2194.3	2232.9	2190.1	2109.7	2001.1	1970.8	1952.0
	NONGR	736.0	741.5	754.4	742.8	720.4	687.8	679.1	673.8
MALES									
I-IIIA	GRADS	2362.1	2393.8	2439.3	2379.9	2262.8	2124.6	2087.7	2065.6
	NONGR	229.4	232.3	236.6	231.3	220.9	208.4	205.1	203.2
IIIB-V	GRADS	2061.7	2083.0	2122.6	2083.6	2006.5	1903.1	1875.8	1858.0
	NONGR	902.3	911.2	928.6	914.0	884.7	843.2	832.7	825.9

*numbers in 1000's

Source: U.S. Bureau of the Census; National Longitudinal Surveys of Youth

TABLE 2

PROPENSITIES AMONG 17-19 YEAR-OLD MALES

BY AFQT LEVEL AND HIGH SCHOOL DIPLOMA (HSDG) STATUS

1979 - 1983

AFQT LEVEL	HSDG	1979	1980	1981	1982
I-IIIA	GRAD	0.124	0.164	0.111	0.086
I-IIIA	NONGRAD	0.268	0.242	0.273	0.288
IIIB-V	GRAD	0.254	0.279	0.271	0.259
IIIB-V	NONGRAD	0.376	0.433	0.455	0.421

Source: National Longitudinal Survey of Youth.

TABLE 3

IMPLIED CAPTURE RATES FOR HSDG VS NON-HSDG I-IIIA MALES
CBO ALTERNATIVES VS ARMY 65% PLAN
1991 PROJECTIONS

	ARMY (65%)	CBO HOLD THE LINE	CBO 1-YEAR CUT	CBO 3-YEAR CUT
% MALE HSDG	88.5	81.0	74.0	68.0
% I-IIIA	65.0	62.1	65.6	65.7
MALE HSDG I-IIIA ACC[1]	58.9	47.3	44.4	41.5
MALE NHS I-IIIA ACC[1]	12.7	21.5	30.1	34.3
MALE HSDG I-IIIA POP[1,2]	2124.6	2124.6	2124.6	2124.6
MALE NHS I-IIIA POP[1,2]	208.4	208.4	208.4	208.4
% GMA[3] POP ACCESSED	2.8	2.2	1.4	1.6
% NGMA[4] POP ACCESSED	6.1	10.3	14.4	16.5
% GMA POS PROP[5]	12.1	12.1	12.1	12.1
% NGMA POS PROP[6]	26.8	26.8	26.8	26.8

[1] Numbers in 1000's

[2] Projected populations from U.S. Census Bureau report prepared for the Army Research Institute, August, 1985. I-IIIA proportions calculated using 1979-1983 NLS data. (cf. Nord and Verdugo, 1986). Manpower and Personnel Research Group, ARI)

[3] GMA=HSDG I-IIIA males

[4] NGMA=NHS I-IIIA males

[5] Average percent 17-19 year-old I-IIIA HSDG males with positive propensity toward military service 1979-1982 (NLS data)

[6] Average percent 17-19 year-old I-IIIA NHS males with positive propensity toward military service 1979-1982 (NLS data)

Source: CBO Report, Table C2, p. 73.

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Manpower and Personnel Policy Research Group Working Paper MPPRG 88-17

PROTOTYPE ARMY COMPENSATION MODEL:

DRAFT MODEL DEVELOPMENT REPORT

Editors:

MATTHEW BLACK, PAUL HOGAN, D. ALTON SMITH

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Reviewed by:

David K. Horne
Labor Economist
Manpower and Personnel Research Laboratory

Approved by:

Curtis L. Gilroy
Chief, Manpower and Personnel
Policy Research Group

MANPOWER AND PERSONNEL RESEARCH LABORATORY

U.S. ARMY RESEARCH INSTITUTE
FOR THE BEHAVIORAL AND SOCIAL SCIENCES
5001 Eisenhower Avenue, Alexandria, VA 22333-5600

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Systems Research and Applications Corporation
2000 Fifteenth Street, North
Arlington, Virginia 22201
(703) 558-4700

SUB CONTRACTORS:

Institute for Social Research
University of Michigan
Ann Arbor, Michigan 48104
(313) 763-6867

Fu Associates
2030 Clarendon Boulevard, Suite 103
Arlington, Virginia 22201
(703) 243-2992

PROJECT DIRECTOR: D. Alton Smith, Ph.D.

AUTHORS:

<u>SRA</u>
Margaret Barton, Ph.D.
Matthew Black, Ph.D.
Carol Chin
Paul Hogan
D. Alton Smith, Ph.D.

<u>Institute for Social Research</u>
Charles Brown, Ph.D.
Gary Solon, Ph.D.
Frank Stafford, Ph.D.

<u>Fu Associates</u>
Andrea McCarley
Dianne Younkman

<u>Consultants</u>
Robert Moffitt, Ph.D.
John Warner, Ph.D.

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The Total Army Personnel Agency (TAPA) and the Army Finance and Accounting Center (USAFAC) provided information on reenlistment bonuses for the active and reserves forces, respectively. Winnie Young of the American Institutes of Research also helped by providing access to data sets collected for other ARI projects.

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Appendices

1.0 INTRODUCTION AND OVERVIEW

During fiscal year 1988, over 160,000 experienced soldiers in more than 350 different occupational specialties will decide whether or not to continue their Army careers. Because the pecuniary benefits of military service play a major role in this choice, the characteristics of the career force in 1989 and beyond will depend largely upon decisions made by the Army today about the level and structure of military compensation. To find the compensation system that will meet the Army's career force requirements, personnel managers need reliable information on how changes in the various elements of military compensation will affect the career decisions of its enlisted members.

The importance of understanding the link between compensation and retention is increased when defense budgets are constrained. In this environment, the benefits of efficient compensation policies, which provide the required career force at minimum cost, can be measured directly in increased funding for other resources needed to perform the Army's missions.

Both these activities--planning for future personnel requirements and designing optimal compensation policies--require quantitative information on the relationship between compensation and retention. It is not sufficient to know that increasing a bonus will raise reenlistment rates; one has to know by how much. Starting with the Gates Commission on the All Volunteer Force, a large literature of empirical studies measuring the quantitative effect of compensation changes on retention has been developed. Unfortunately, only a few studies have focused on Army enlisted personnel. The goal of the Prototype Army Compensation Model project is to remedy that deficiency by developing state-of-the-art models of the relationship between compensation and retention for the Army career force.

The project has three phases. In the first, which is the subject of this report, potential compensation-retention models are developed. Starting with economic theories of individual choice, our goal is to specify mathematical models that meet two criteria. First, they should capture the essential features of the retention decision for enlisted personnel, incorporating the various elements of military compensation elements as variables. Second, it must be possible to estimate the parameters of the proposed models with reasonable precision using the available data. Theoretical sophistication must be tempered, therefore, by practical considerations.

The second phase of the project involves the estimation of the parameters of the proposed models. Here alternative specifications will be tested for their accuracy in predicting retention decisions. Finally, the estimated compensation-retention models will be incorporated in computer-based policy analysis models in the third phase. These models allow personnel analysts to use the results of the research without having to become experts in the details of econometric modeling.

Section 2 of this report reviews the existing literature on military compensation-retention models. Because our focus is on model development, we concentrate on the theoretical aspects of the models that have been used rather than discussing particular empirical results. Our survey includes research from all the services.

With the background provided by the literature review, section 3 outlines our model development efforts. We have taken a two-track approach in designing compensation-retention models for the Army. Our core research effort will use the ACOL-2 model, a refinement of the Annualized Cost of Leaving methodology that has dominated retention research. The theoretical development of the ACOL-2 model is described in detail in section 2. In section 3, we outline the empirical issues we will address in applying this approach to Army retention. Because we have successfully used the ACOL-2 methodology in modeling Navy reenlistments and DoD civilian quit rates, we know before beginning estimation that this approach will yield better compensation-retention models than are currently available to Army policymakers.

The second research track is more exploratory. It seeks to move beyond the current state of the art in the following areas:

- o Developing dynamic programming approaches to compensation-retention models that can be easily estimated.
- o Linking attrition and reenlistment models in a coherent framework for analyzing the effects of compensation on retention behavior.
- o Examining the effects of compensation policies on the quality of the career force.
- o Developing models that describe the optimal career length for enlisted personnel.

Each subject offers potential improvements in our understanding of the link between compensation and retention. To the extent this promise is fulfilled, these innovations will be incorporated into the core models developed under the first track.

All the model development efforts we have described so far are concerned with active duty enlisted personnel. In addition, we will exploit a new data source to estimate models of the link between compensation and retention for the Selected Reserves. Section 3 includes research proposals outlining how this topic and the other exploratory issues will be addressed.

Empirical models, such as those that will be estimated in the compensation models project, are more often constrained by the type of data available to estimate the parameters than by the applicability of existing economic theory. Recognizing this, a substantial portion of the activity in the model development phase of the project has involved data collection. As a result, two new data sets will be available for use on the project:

- **Active duty enlisted longitudinal files.** This data set tracks a random sample of all AVF accessions from entry until separation, combining information from the Defense Manpower Data Center (DMDC), the Total Army Personnel Agency (TAPA), and the Training and Doctrine Command (TRADOC).

- **Selected Reserves files.** This data set combines information from the Reserves Components Common Personnel Data System (RCCPDS) with the 1986 Reserve Components Survey to provide an analysis resource that is superior to personnel records or survey data alone.

We have also collected information on key policy variables, such as Selective Reenlistment Bonus multipliers, over the AVF period.

This project brings together a solid theoretical framework for Army retention decisions, state-of-the-art econometric techniques for estimating retention-compensation models, and a new, comprehensive, longitudinal data base upon which to estimate the models. This combination will offer the Army a firm foundation on which to build planning and policy analysis models that will better serve Army decision makers in the future.

2.0 LITERATURE REVIEW AND DESCRIPTION OF THE ACOL-2 MODEL

The reenlistment decision -- the decision to remain in or leave military service -- is a particular application of the more general economic theory of occupational choice. The ACOL-2 model of reenlistment behavior, part of the core analysis of this project, evolves from a rich occupational choice literature, dating back at least to Adam Smith's (1776) discussion of compensating wage differentials.

The premise common to the economic literature concerned with occupational choice is that rational individuals choose among alternative occupations based upon the pecuniary and non-pecuniary attributes of each alternative, such as current pay, deferred pay, hours of work, location, and physical risk. The individual acts as if he ranks alternatives in terms of the expected satisfaction these attributes provide. He chooses the alternative occupation, or path of occupations, that offers the greatest satisfaction or utility over his lifetime.

Job attributes are substitutes for one another. For example, increased pay may offset the negative characteristics of a particular occupation such as physical risk or poor work location. Increasing the financial rewards of an occupation, while holding all other things constant, will increase the probability that an individual will choose that occupation.

Models of the decision to remain in or leave military service have importance beyond the intellectual exercise of economic theory and practice. Reenlistment models have been used to help formulate policy on annual military pay raises, reenlistment bonuses, and changes in the military retirement system. The decision to return to a volunteer force in 1973 was influenced, in part, by predictions of the increases in retention that could be anticipated under alternative pay policies. Hence, the degree of rigor with which these models are specified and estimated, and the accuracy with which they predict the effects of alternative policies, are of no small concern. The costs of being wrong, in many instances, are too large to dismiss casually.

Section 2.1 gives a brief overview of reenlistment decision models. Section 2.2 outlines early reenlistment behavior research. Section 2.3 describes the historical development of the Annualized Cost of Leaving (ACOL) model. Section 2.4 critiques the ACOL reenlistment model and other related models, while Section 2.5 introduces dynamic retention models and describes in detail the ACOL-2 model. Appendix A further discusses the theoretical development of the ACOL model and the Gotz-McCall dynamic retention model.

2.1 OVERVIEW OF REENLISTMENT DECISION MODELS

With few exceptions, the underlying theoretical structure of reenlistment decision models has remained firmly grounded in the economic theory of occupational choice. Much progress has been made in modeling reenlistment behavior over the past 15 years, however. This progress has occurred primarily in four areas: (1) the extent to which institutional details are captured in the models; (2) the sophistication of econometric methods used in estimating the models; (3) the greater correspondence between the underlying theory and the econometric specification; and (4) the adaptability of relatively sophisticated retention models for use in easily operated policy simulation models.

The following review is organized into three historical periods. The first period, described as the "early work", began around the time of the Gates Commission (1970) and continued through the late 1970s. The impetus of this work was largely to obtain estimates of the effects of extant policy variables, such as pay and bonuses, so that the effects of increasing or decreasing these incentives could be evaluated for policy purposes. This research concentrated almost exclusively on the first-term reenlistment decision.

The second period began with the development and application of the Annualized Cost of Leaving (ACOL) model. It is characterized by (1) concern with the ability of a model to simulate the effects of relatively large changes in policies, such as the military retirement system; (2) increasing attention paid to the relationship between the estimated model and its underlying theory of optimal decisionmaking; and (3) recognition of the institutional constraints placed upon Service members. Some analysis in this period expanded beyond the first-term decision to encompass a multi-decision framework.

The last period is described as the post-ACOL era. Emphasis is placed on extending the ACOL methodology with dynamic retention models of individual decisionmaking over time, and on the economic interpretation and modeling of complex error structures.

To fix ideas, consider the evolution in the estimated effect of reenlistment bonuses. In some early work (e.g., Enns 1977) reenlistment bonuses entered the retention equation as integers describing the multiples that were offered. For example, the Zone A multiple ranged from 0 to 6. The effect of a given bonus policy could be measured with reasonable precision, as long as the bonus program remained fixed. However, this approach could not be used to estimate the effect of a change in bonus policy, such as bonus payments in lump sums rather than installments, an increase in the bonus cap, or counting previously obligated service in the computation of the award. All of these policy decisions could be answered under the ACOL approach, where the annuitized value of the bonus is computed.

However, the ACOL model does not distinguish between the future retention rates of bonus-induced reenlistments and others. It predicts that expected future manyears of service from one who reenlists in the presence of a level six bonus are the same as from one who reenlists and receives no bonus, other things being equal. Models in the post-ACOL generation, however, distinguish between these two motives for reenlisting. By modeling the conditional distribution of unobserved "tastes" for military service, these more sophisticated models adjust their predictions of subsequent retention as a consequence of past compensation policy.

2.2 EARLY REENLISTMENT RESEARCH

Some of the earliest work on enlisted retention behavior was that done for the Gates Commission. The decision to return to a volunteer force rested, in part, on the budget cost of increasing retention and lowering the demand for accessions under a volunteer force. Hence, an estimate of the increase in reenlistments that could be anticipated under alternative pay policies was needed. Grubert and Weiher (1970) estimated reenlistment equations for first-term Navy enlisted personnel using a functional form that was linear in the natural logarithm; Wilburn (1970) estimated the effects of the draft and pay on the retention of first-term Air Force enlisted personnel under a logit specification; and Nelson (1970) analyzed first-term Army reenlistments using a log-linear specification.

This early work clearly established the empirical relationship between enlisted retention decisions and key variables such as military pay, potential civilian earnings, and draft pressure.[1] While it was an excellent beginning, much room was left for further research. The analyses considered only the first-term reenlistment decision, using data on reenlistments grouped by occupational categories. Data limitations, computational cost, and the state of econometric methods undoubtedly precluded more ambitious efforts. Specific problems included: (1) the empirical specifications of the models, while plausible and generally related to the theory of occupational choice, were not derived rigorously from an underlying utility maximization framework;[2] (2) insufficient attention was paid to the institutional details of the military personnel system, such as the distinction between reenlistments and extensions; (3) the functional forms chosen for estimation often were less than ideal;[3] (4) the horizon over which military and civilian pay were compared, while reasonable, was arbitrary; (5) the problems created by censoring and selectivity bias were not yet appreciated in the economics and econometrics

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PERHAPS A SPECIFIC [illegible] THAT EXISTED AT TIME

[1]This last variable can be interpreted as an early attempt to account for the underlying taste distribution of potential reenlistees, a theme that receives increasing attention in the later literature.

[2]An exception to this is a paper by Altman and Barro (1970) on the supply of officers, which presents a theoretical model of the decision to enter military service much like that found in the more recent retention literature.

[3]For example, some did not constrain the reenlistment rate to lie within the unit interval. Others placed constraints without theoretical reason.

literature; (6) the coefficients estimated were accepted as structural coefficients from a supply equation without addressing the possibility of simultaneity bias;[4] and (7) the models were estimated using grouped data resulting in loss of information and possibly aggregation bias.[5]

Enns (1975, 1977) estimated the effects of variable reenlistment bonuses and selective reenlistment bonuses for first-term personnel in all Services. While the work did not represent a significant advance over previous efforts, it did produce estimates of the effects of bonuses on reenlistment rates that were used by defense analysts through the early 1980s.

Overall, research on reenlistment behavior through the mid-1970s made no major advance in theory, scope, or technique. Estimated military pay elasticities derived from the empirical results of this period are summarized in Table 2-1.

In general, these models examined only the first-term reenlistment decision using grouped data. They were specified as rather ad hoc models, though the included variables are consistent with occupational choice theory.

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[4]For example, rational allocation of variable reenlistment bonuses would suggest the possibility of simultaneity bias.

[5]Much of the work has stood the test of time quite well, however. For example, based upon the analysis of first-term retention in the Army, it was predicted that Army would achieve a career ratio (percentage of the enlisted force with more than 4 years of service) of 46.4%. The actual career ratio at the time was about 29%. In FY85, the actual career ratio was about 46%!

Table 2-1

Early Models of First Term Reenlistments

Author	Period	Service	Pay Elas-ticity
Nelson (1970)	1968	Army	2.4
Wilburn (1970)	1968	Air Force	2.4
Grubert and Weiher (1970)	1968	Navy	2.2
Kleinman and Shughart (1974)	1965-1972	Navy	2.2-4.2
Enns (1977)	1971-1973	All	2.0

2.3 ANNUALIZED COST OF LEAVING (ACOL) MODEL

The first major departure from the early literature was the development of the ACOL model by Nelson and Warner.[6] The major contributions of the model were that (1) it provided a rational basis for determining the horizon over which military and civilian pay are compared, and (2) it related the estimated retention equation more directly to individual utility-maximizing decisions. Prior to the development of ACOL, expected military and civilian pay entered retention models either as a ratio or a difference computed over an arbitrary period, such as 1, 4 or 15 years. The ACOL algorithm selects, over all possible "horizons" or future leaving points, the horizon that maximizes the annualized difference between the pecuniary returns to staying and the returns to leaving immediately.

[6] See, for example, Enns, Nelson, and Warner (1984).

Related to this was an attempt to derive the reenlistment equation directly from assumptions concerning individual utility maximization. Though the degree of success in this regard is a matter of some debate, the ACOL model and the literature it has generated ensure that consistency with utility maximization is a criterion by which all work in this area will be judged.

The importance of comparing pay over the correct "horizon" is apparent when evaluating the effect of a change in the military retirement system on first- or second-term reenlistments.[7] The military retirement system offers those who entered prior to 1980 an annuity of 50% of basic pay for life to those who leave after completing 20 years of military service. Those who leave prior to completing 20 years receive nothing.

The predicted effect of a change in the retirement system depends on whether the horizon for comparing expected military and civilian compensation at a particular reenlistment decision point extends to the 20-year point. If it does not, the model would predict no effect on reenlistments at that decision point. Prior to ACOL, these horizons were determined in an _ad hoc_ fashion, depending upon the problem at hand. In ACOL, the horizon is endogenously determined by the time paths of military and civilian pay.

A logit specification of the model was first estimated by Warner (1979), using grouped cross-section Navy data from YOS 4 through 16. This procedure resulted in reenlistment pay elasticities of between 2 and 3 at the first-term point. Chipman (1979) and Enns, Nelson, and Warner (1984) have also estimated the model in this manner, with similar results.

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[7]In fact, ACOL was developed to analyze exactly this problem.

Since its formulation, versions of the ACOL model have been applied to several services and to a number of different problems. Warner (1982) estimated a sequential logit version of the model for both the first-term and second-term reenlistment decision in the Marine Corps, using grouped data over the period FY77-78.[8] A reenlistment was defined as a commitment of an additional 3 years or more and an extension was defined as a commitment of less than 3 years. Warner first estimated the probability of staying; then estimated the probability of reenlisting or extending conditional on staying. Hence the decisions were structured as a sequential process. The first- and second-term equations were estimated separately. He found that pay elasticities with respect to the stay decision were generally in the range of 1-2 at the first term, and in the range of 1-3 at the second term. The elasticities varied depending upon occupational category. Zulli (1982) estimated a sequential logit model for enlisted personnel in the Navy making their third reenlistment decision. He found an all-Navy pay elasticity of about 0.64.

Warner and Goldberg (1982) examined first- and second-term reenlistments in the Navy over the period FY74-80. A conditional logit model was used to estimate the probabilities of reenlisting and extending versus leaving the Navy, at each of the two decision points independently. Their conditional logit formulation improves upon the sequential decision model assumed in the Marine Corps analysis.[9] Using grouped data, Warner and

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[8]A potential weakness of the sequential logit model is that it assumes that unobserved factors influencing the stay-leave decision are independent of the unobserved factors affecting the reenlist-extend decision.

[9]The conditional logit model, however, is a poor choice in the analysis of extensions versus reenlistments because it

Goldberg found pay elasticities for the stay decision of 1.12 to 2.72 at the first-term decision point and 0.94 to 3.78 at the second term. Somewhat surprisingly, given the differences in method, these elasticities were in the same range as those found in Warner (1979).

Other variables in the Warner-Goldberg (1982) model included a measure of expected sea duty and a measure of the civilian unemployment rate. The effects of these variables were in the hypothesized direction. Longer expected durations of sea duty were associated with lower retention rates, though the effect was estimated imprecisely. A one-percentage-point increase in the civilian unemployment rate was estimated to raise the first-term retention rate by about 0.8 to 6.5 percentage points and the second-term rate by about 0.2 to 4.1 percentage points, depending on the occupational category. Finally, the first-term bonus received by those facing their second-term reenlistment decision was included as an explanatory variable. It entered with a negative sign. The interpretation is that large first-term bonuses induce those with a lower average "taste for service" to reenlist. Hence, this group will reenlist at a lower rate than an otherwise similar group which did not enjoy a first-term reenlistment bonus. Inclusion of the (lagged) first-term bonus at the second reenlistment point is an _ad hoc_ method of adjusting for the "taste" distribution, the importance of which is discussed in Section 2.4.

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constrains reenlistment bonuses to reduce extensions by the same percentage that it reduces losses. Goldberg (1985) provides evidence that reenlistments and extensions are close substitutes. Hence, the conditional logit model's "independence of irrelevant alternatives" assumption may be particularly inappropriate to an analysis of reenlistments versus extensions.

Daula (1981) was critical of the early ACOL model work. His major points were: (1) the ACOL variable was inconsistent with risk aversion; (2) previous estimates of the civilian earnings opportunities in the model did not account for selectivity bias; and (3) additional nonpecuniary factors should be included in the formulation of the ACOL model. Daula estimated an occupational choice model of the individual reenlistment decision of Army combat arms personnel who enlisted after FY73 and reached the first reenlistment point over the period FY75-80. His model was similar to ACOL, except that the financial incentive to stay was measured as the difference in the natural logarithm of military and civilian earnings. This specification is consistent with diminishing marginal utility of income.[10] Civilian earnings opportunities were estimated jointly with the reenlistment equation using a maximum likelihood procedure that also adjusted for selectivity bias. His estimated pay elasticity for the combat arms personnel was small, on the order of 0.25.

2.3.1 Recent Research Outside the ACOL Framework

This section reviews selected research on the enlisted retention decision that is outside the basic ACOL framework. Section 2.4 follows with an explicit critique of ACOL and an exposition of alternative models that purport to satisfy some of the major concerns of the critique.

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[10]Daula employed the logarithmic transformation of earnings because it is consistent with diminishing marginal utility of income and, therefore, risk aversion. Individuals are described as risk averse if they are willing to pay a positive amount to receive with certainty the mathematical expectation of a gamble, rather than the random outcome of the gamble. He did not, however, attempt to measure the riskiness of alternative pay streams.

Rodney et al. (1980) estimated models of the first- and second-term reenlistment decisions in the Navy using data from the period 1973-1979. Cross-sectional and time-series observations were pooled by skill in a variance-component model that accounted for unobserved skill-specific and time-specific effects. The study is distinctive in that two wage variables were specified in the same equation -- one for a horizon of 4 years and another for a longer horizon extending to the retirement vesting point -- presumably letting the data itself provide the implicit weights to the two career paths. A "total" pay elasticity of about 2.3 was found.

Hosek and Peterson (1985) estimated a trichotomous logit model for both the first- and second-term retention decision using grouped data from all the services over the period FY76-81. The choices analyzed were reenlist, extend, or leave. The study is reminiscent of Warner and Goldberg (1982), but the model is clearly outside of the ACOL framework for (at least) two reasons. First, the pay variable was specified as an index of current military pay relative to civilian pay, and the reenlistment bonus entered as a separate variable. There is no financial variable analogous to a "cost of leaving". Second, the specification is unrelated to the random utility model of choice behavior implicit in the conditional logit model used by Warner and Goldberg. In the Hosek and Peterson specification, the reenlistment bonus was entered explicitly in the extension versus leave equation even though those who extend do not receive a bonus. Hence, while this logit specification suffers less from the "independence of irrelevant alternatives" assumption, it cannot easily be related to an underlying model of utility maximization.

A major contribution of the Hosek and Peterson paper is the explicit treatment of potential simultaneity bias in estimating the effect of reenlistment bonuses on retention. As noted by Enns (1977), the estimated effect of bonuses on retention may be subject to bias. Effective bonus allocation will tend to target bonuses to skills where retention is poor. However, if bonus allocations are a function of the reenlistment rate, or if there are unmeasured factors affecting both retention and bonus allocations, then the estimated effect of bonuses on retention will be biased downward. Hosek and Peterson provide a solution for this problem by measuring the explanatory variables as deviations from their means.[11] The estimated pay elasticity with respect to retention was 3.8 at the first-term decision point and 1.7 at the second term.

Lakhani and Gilroy (1986) also specify a trichotomous logit model of first-term retention decisions in the Army. It is estimated using cross-sectional micro data from FY80-81. The specification of the wage and bonus variables was similar to that of Hosek and Peterson, except that the effects were permitted to vary by career management field (CMF). Reported pay elasticities with respect to <u>reenlistments</u> ranged from about 1 to 15 across CMFs.[12]

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[11]This procedure, in effect, is analogous to a variance-components model. For some reservations about the procedure, see Hausman and Taylor (1981).

[12]Please note the emphasis on "reenlistments". It is increasingly clear that one must distinguish reenlistment from retention elasticities when interpreting pay or bonus coefficients. In general, the "reenlistment" elasticity with respect to bonuses will be much greater than the "retention" elasticity. In the early literature, this point was not often recognized, perhaps because extensions have become a significant proportion of total "stayers" only recently. Bonuses induce a large number who would have extended to reenlist. Hence, reenlistment elasticities will be larger generally than retention elasticities.

2.4 CRITIQUE OF ACOL AND RELATED MODELS

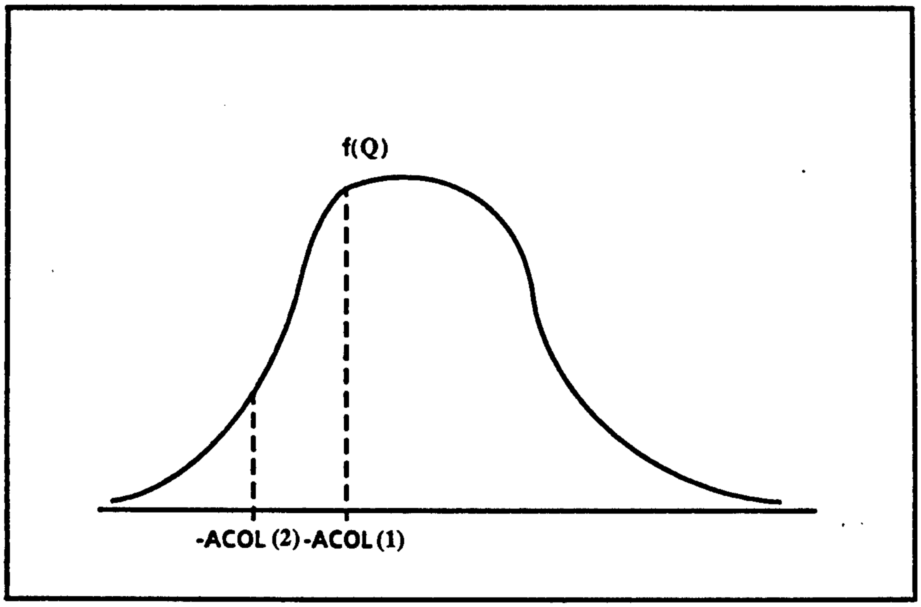
The most comprehensive critique of the structure of the ACOL model is found in Warner (1981) and Fernandez, Gotz, and Bell (1985). The points raised by these papers apply to a much broader class of models than ACOL, however. We divide the critique of ACOL into three areas: (1) failure to account for the distribution of unobserved individual-specific factors affecting retention, which we have summarized as the "taste for service"; (2) short-comings in capturing the interaction between the individual's optimal decision rule and the constraints he faces; and (3) other specific problems.

2.4.1 Unobserved Heterogeneity and Individual Decisions

Both Warner (1981) and Fernandez et al. (1985) have described the ACOL model as being internally inconsistent in its explanation of the pattern of retention rates over years of service. To examine the nature of this criticism, consider the expected rate of retention (r) at the first-term reenlistment point:

$$r(1) = \Pr[(Q) > -ACOL(1)] = \int_{-ACOL(1)}^{\infty} f(Q)\,dQ \qquad (2.1)$$

All those with a "taste for service" variable, Q, less than -ACOL(1) will leave. Hence, the taste distribution becomes truncated at -ACOL(1), as shown in Figure 2.1 below.



Taste Distribution

Figure 2-1.

At the second reenlistment point for this cohort, if the value of ACOL(2) > ACOL(1), the model implies that the second-term reenlistment rate will be unity. More generally, the model predicts that, for a given cohort, if:

$$ACOL(t) > \min \{ACOL(t-1), ACOL(t-2), \ldots\} \qquad (2.2)$$

then the reenlistment rate at that point will be 1. In fact, ACOL values do tend to rise with years of service, largely because of the retirement system, yet the reenlistment rates do not approach unity until about the 14th year of service. Hence, the model's prediction is inconsistent with the empirical evidence.

Moreover, the way the model has been estimated in the past has been inconsistent with its logical structure. If, at the first-term reenlistment point, the distribution of the taste component, Q, is normal, at the second-term decision point, the distribution of tastes will be truncated normal, with the truncation point equal to (the negative of) the first-term value of ACOL. The actual second-term reenlistment or retention rate, then, will depend not only upon the second-term value of the financial incentive to stay, but upon the first-term retention rate (or ACOL value) as well. In the past, the model has been estimated in a way that assumes that the distribution of "tastes for service" at any given decision point are independent of the distribution of tastes at prior years.[13] It is as if the model's structure were simply, reenlist if $ACOL(t)+e_t > 0$, where e_t is identically and independently distributed over time.

An estimate of a second-term reenlistment or retention equation that does not take into account the retention or survival rate up to that point will be estimated imprecisely and perhaps with bias.[14] For example, a cohort that experienced a loss rate of 90% at the first-term point is likely to have a much different retention rate at the second-term decision point than a cohort which enjoyed a 10% loss rate at the first-term reenlistment point, other things being the same. Hence, while a model may predict well for some policy changes, its predictions will be some increasingly erroneous as the censoring in the taste distribution deviates from its historical pattern.

This problem is simply a manifestation of the more general problem of "unobserved heterogeneity". Individuals differ by unobserved or unmeasured factors. If these factors affect their behavior in a systematic way, then the choices individuals make

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[13]Warner and Simon (1980) estimated a second-term retention equation and included an estimate of the ACOL value that each cohort faced at the first term as an explanatory variable in an ad hoc attempt to adjust for the changing taste distribution.

[14]If the unobserved factors are correlated with the explanatory variables, the estimated coefficients may be biased.

will be systematically correlated with the unmeasured factors. In the military personnel system, individuals who remain in military service will tend, on average, to have unmeasured factors that increase the probability of staying, relative to the probability of staying conditional only upon the observable factors. Conversely, those who possess unmeasured factors that tend to reduce the probability of staying will tend to select themselves out of the military. Hence, the distribution of these unobserved factors affecting retention behavior will change in a systematic way, as a given entry cohort passes through successive reenlistment decision points. We have called these unobserved components the individual's "taste for service", but it may include a broad range of factors. "Tastes" are more than just a description of the relative employment preferences of a military versus civilian job. They may include any observed factor specific to the individual that affects his employment choice. Since ACOL values tend to rise with years of service, failure to account for the censoring in this unobserved "taste" component will result in an ACOL coefficient that is biased upward in a longitudinal analysis. If, on the other hand, both the individual's financial incentive to stay and his "tastes" are positively correlated over time, cross-sectional estimates of the effect of compensation on second term (and beyond) retention will be biased downward.

2.4.2 Optimal Decision Rules, Constraints, and Choices

The previous criticism of the ACOL model centers on dynamic behavior that is influenced by an unobserved, underlying taste distribution. The criticism is part of a more general critique of econometric models used for policy evaluation: observed relationships between individuals and the environment are the result of the interaction of individual optimizing behavior, the constraints placed upon the individuals, and the choices or opportunities they face. When the constraints change, behavior will change. According to this view, behavioral changes cannot be predicted from econometric models that accept the original relationship between individual behavior and the existing constraint as a structural relationship. Initially, the econometric model should be formulated in terms of the "deeply embedded" parameters of tastes and technology, if one wishes to predict the effects of large changes in the policy environment.

Lucas (1976) was among the first to make this argument in the context of econometric models used for macroeconomic policy evaluation. Sargent (1981) applied the observation to a more general class of econometric models, emphasizing the point made here that "...people's behavior will change when their constraints change."[15] The key message of this literature is that econometric models that implicitly accept certain policies and the observed outcome of those policies as part of the structural environment will, in general, be incapable of accurate predictions when those policies change. The estimated model may "fit well" over any particular historical episode, but the behavioral relationships captured in the model will not predict the effects of major policy changes well.

The treatment of the "taste for service" distribution may be reinterpreted in the light of this observation. Estimates of the effect of pay on second-term retention may be obtained by estimating the equation independently of the first-term decision. That is, the unobserved "taste" distribution may be ignored. One may obtain a coefficient that is apparently

[15]Sargent (1981) p. 213. At one time, this was known as the "rational expectations critique" of econometric modeling, but this usage appears to have faded. Sargent calls the models that attempt to meet this criticism "dynamic, stochastic equilibrium models".

significant and unbiased.[16] However, embedded in the coefficient is the effect that pay policy at the first-term decision point has had on the taste distribution at the second-term point. The model will yield reasonably good predictions only as long as future pay policy at the first term does not depart substantially from the policy in effect during the estimation period. Should this not be the case, the model will unravel.[17]

Within the military retention literature, this criticism has been applied almost exclusively to the ACOL model though it is clear that the point is general. The ACOL model has been the key model for estimating the effects of the type of major policy change that epitomizes this critique -- a major structural change in the military retirement system.[18] There are at least two reasons why the ACOL model's estimates of such a change should be interpreted with caution. First, current retention behavior produced by current compensation policy is embedded in the structural coefficients. This is the point made in this section. Second, a radical change in the retirement system may cause portions of an underlying taste distribution to become relevant for the first time. Since our information concerning

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[16]That is true only if pay policy at the first term remains stable. If first-term pay policy, and therefore, the second-term taste distribution, has been volatile, one may not be able to estimate a significant second-term relationship, because the effect of the taste distribution on second-term rates is unmeasured.

[17]This point is made quite clearly in Fernandez et al. (1985), but they do not acknowledge the similarity between this observation and the more general critique by Lucas (1976) and Sergeant (1981).

[18]The Fifth QRMC, OSD, Navy, CBO, and others have used versions of the ACOL model to estimate the effects of proposed changes to the military retirement system on enlisted retention.

this portion of the distribution may be poor, the estimates are subject to greater uncertainty. Better modeling may be able to alleviate the first type of problem, although we are forced to bear the second type of uncertainty.[19]

2.4.3 Specific Modeling Problems

There are several specific problems associated with ACOL as well as with other retention models:

Single Horizon. The assumption of a single horizon over which the cost of leaving is calculated is tenuous. It can make a difference in the predictions for some types of pay changes. Fernandez et al. (1985) discuss some of the problems caused by neglecting pay beyond the optimal horizon, while Hogan (1985) discusses a case where neglect of periods less than the calculated optimal horizon may result in misleading inferences.[20] Nevertheless, for most applications the single-horizon assumption is satisfactory and greatly simplifies the analysis.

Simultaneous Equations Bias. This problem is common to most models of enlisted retention behavior, including the ACOL model. As discussed in Hosek and Peterson (1985), this problem results from targeting bonuses and other special pays to skill shortage areas.

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[19]A frequently heard objection to simulations of proposed policy changes is that they "...require extrapolation beyond the range of experience over which the parameters were estimated." Those making this point usually mean that the model has not identified the structural parameters of the system.

[20]Note that the single-horizon assumption is related to the first two critiques made in Section 2.2, and is a result of a particular stochastic specification of the model.

Effects of Compensating Wage Differentials. Related to the problem of simultaneity bias is that of compensating differentials. Warner and Goldberg (1982), among others, have found that military occupations considered more onerous in nature also tend to be less wage elastic. However, the estimated effect of pay on retention in those occupations may be negatively biased. Bias will arise if the nonpecuniary aspects of the occupation affect retention adversely, but are unmeasured or measured with error, and special pays or bonuses are used to offset partially the adverse retention effects.

Individual's Personal Discount Rate. The discount rate affects how the "cost of leaving" is measured in ACOL. With the exception of a change in bonuses from installments to lump-sum, there has not been the type of pay variation necessary to measure the discount rate of military personnel.[21] Hence, reliance has been placed upon survey results (e.g., Black 1983) and external estimates. Note that the discount rate makes the greatest difference precisely in those types of pay changes that have not been frequently observed.

Civilian Wage Data. The paucity of disaggregated data on the earnings experiences of military personnel has plagued the estimates of retention equations. The usefulness of sophisticated econometric methods that adjust for sample selection bias is limited by the poor quality of civilian wage data (see Daula 1981, and Goldberg and Warner 1983).[22] Daula

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[21]See, for example, Cylke et al. (1982).

[22]In this context, the selection bias is that individuals are making choices based upon their anticipated civilian earnings. If these choices are a function, in part, of factors that are unmeasured by the researcher, inferences of the potential earnings of those who did not make the choice based upon the

and Baldwin (1985) recently argued that "...the thrust of reenlistment research should turn to assembling better data sets with particular attention to the civilian earnings data for veterans."[23]

Risk Aversion. There is much evidence suggesting that individuals are risk averse. Applied to occupational choice theory, individuals will prefer an occupation with lower earnings dispersion to one with higher dispersion, other things being equal.[24] Daula (1981) and Daula and Baldwin (1986) have noted that neither ACOL nor any other retention model has incorporated risk aversion.

Incorporation of risk aversion is not difficult in concept, but requires strong assumptions to implement empirically. For example, assume that individuals have a utility function that is a quadratic in income, Y, such as $U = aY-bY^2$. Then, if individuals act as if to maximize expected utility, $E[U]$, the expected utility of a given occupation is $aE[Y]-bVar[Y]$, where "E" is the expectations operator and "Var" is the second moment. Hence, occupations may be compared not only by mean earnings, as is done in current retention models, but also by the difference in the second moment of the distribution. The problem in this specification would be to obtain a reasonably good estimate of the second moment of the earnings

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actual earnings of those who did may be biased. See, for example, Warner and Goldberg (1982), Daula (1981), Daula and Baldwin (1986), and Heckman (1979).

[23]Daula and Baldwin (1985), pp. 212-213.

[24]More formally, if $U(I)$ is the individual's utility function with income, I, as an argument, then $U'(I) > 0$ but $U''(I) < 0$.

distribution.[25] Finally, if the measures of dispersion are constant over time, the issue of risk aversion may be moot.

2.5 ACOL-2 MODEL

The retention models discussed above are suitable for analyzing a limited range of compensation changes. These models, however, do not contain an internally consistent explanation of retention patterns over an entire military career. Therefore, they cannot be used to predict the force structure implications of broad compensation changes that would violate the unobserved structural factors that condition the estimated parameters of the models. Instead, previous models have applied ad hoc measures to control for the effects of factors or processes not captured by the models.

This issue has been addressed by the dynamic retention model (DRM), developed originally by Gotz and McCall (1980), and the stochastic cost of leaving (SCOL) model, an equivalent model developed by Warner (1981). The ACOL-2 model represents a more recent effort to overcome the self-selection problem of the ACOL model. It captures many of the desirable economic properties of the dynamic retention model, while retaining the simpler structure of the ACOL model.

These models attempt to identify a structural model of military retention that is less dependent on any particular pattern of past compensation and force management policy

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[25] Alternatively, one might assume that both military and civilian average earnings opportunities are viewed as certain, except that there is a probability U of being unemployed in the civilian sector, and a probability 1-U of being employed and earning the civilian wage W. Then, expected civilian earnings are $(1-U)W$, and the variance is $W^2(1-U)^2U^2$.

constraints and, therefore, is better suited for exploring the effects of large changes in policy. In particular, these models account for the changing distribution of the unobserved individual-specific factors affecting retention, and derive a stochastic time horizon as the rational reaction to uncertainty.

The ACOL-2 model is derived from the original ACOL model in that it uses the same financial incentive variable -- the Annualized Cost of Leaving (ACOL). The ACOL-2 model, however, differs importantly in its handling of unobserved heterogeneity, or tastes, that underlies the self-selection process, and by explicit inclusion of a transitory random error affecting reenlistment behavior at each decision point.

The ACOL-2 model thus overcomes two major shortcomings of the original ACOL formulation. First, it provides an internally consistent explanation of why reenlistment rates are not unity beyond the first term of service, an erroneous literal prediction of the simple ACOL model.[26] Second, it corrects for the selectivity bias that may result from failing to account for unobserved heterogeneity in a multi-decision model. That is, it recognizes that reenlistment rates will rise with years of military service because those who stay have a stronger taste for military service than otherwise similar persons who leave. Failure to account statistically for this unobserved heterogeneity may result in biased coefficients on measured variables, such as the financial returns to staying, if these variables are correlated with the changing taste distribution over time.

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[26]See Section 2.4 and the development of the original ACOL and Gotz-McCall models in Appendix A, or Warner (1980).

In a sense, ACOL-2 represents a compromise between the simple, but theoretically flawed, multi-period version of ACOL and the theoretically rigorous, but less flexible, dynamic retention model of Gotz and McCall.

2.5.1 Derivation of ACOL-2

Recall that the decision rule for period t from the ACOL model is to stay if:

$$ACOL_{it} + Q_i > 0 \qquad (2.3a)$$

where Q_i is the individual's taste parameter, and $ACOL_{it}$ is the annualized cost of leaving for the ith individual making a reenlist-separate decision in period t. This deterministic formulation, however, creates a problem because it excludes a random disturbance term. Hence, if $ACOL_{t+n} > ACOL_t$ for any given cohort, the reenlistment rate in period t+n will be unity. The taste distribution becomes truncated after the first reenlistment point at $-ACOL_t$, as those with tastes less than this value leave. This literal prediction is at odds with empirical evidence of a rising ACOL with YOS, and a reenlistment rate that does not approach unity until after YOS 14. In a multi-period case, the theoretical formulation of the ACOL model is inconsistent with fact.

In practice, the empirical specification of the ACOL model does not conform to its theoretical formulation. Because tastes are unobserved, the model simply includes Q_i in the disturbance term u_{it}. As a result, the original model predicts a reenlist decision if:

$$ACOL_{it} > -u_{it} \qquad (2.3b)$$

In a one-period case, this specification does not present a problem. But in a multi-period case, the model breaks down because the expected value of u_{it} for $t>1$ is no longer centered on zero unless all individuals in the initial cohort have identical tastes. Moreover, both $ACOL_{it}$ and u_{it} tend to rise with YOS which implies that the estimated model parameters may be biased.

The ACOL-2 model overcomes this problem by splitting u_{it} into an unobserved fixed taste component and a transitory random term, e_{it}, distributed normally with mean zero and variance $S_e{}^2$:

$$u_{it} = Q_i + e_{it} \tag{2.4}$$

This structure of the error term is referred to as a one-factor variance-components model. In the ACOL-2 model, an individual's decision rule is to reenlist if:

$$ACOL_{it} + Q_i + e_{it} > 0$$

or,

$$e_{it} > -ACOL_{it} - Q_i \tag{2.5}$$

In sum, the change introduced by the ACOL-2 model can be described from two perspectives. In terms of its <u>theoretical</u> formulation, equation (2.3a), the ACOL model includes Q_i but excludes e_{it}. The ACOL-2 model adds the random disturbance term. In terms of its <u>empirical</u> specification, equation (2.3b), the ACOL model does include e_{it} but excludes Q_i because the latter is unobservable. A major contribution of ACOL-2 is that its empirical specification does include Q_i, along with e_{it}, which is consistent with its theoretical underpinnings. This change introduced by ACOL-2 implies a different theoretical development that is described below.

Assume that the cumulative distribution of e_i is $F(e_i)$, and that $G(Q_i)$ is the cumulative normal distribution of the taste parameter. The probability that individual i reenlists at time t is:

$$p(t) = \text{Prob } \{-[ACOL_{it}+Q_i] < e_{it}\}$$

$$= \int_{-(ACOL_{it}+Q_i)}^{\infty} d\, F(e_{it}) \tag{2.6}$$

Because of the symmetry of the normal distribution, this is equivalent to:

$$p(t) = \int_{-\infty}^{ACOL_{it}+Q_i} d\, F(e_{it}) = F[ACOL_{it} + Q_i] \tag{2.7}$$

The probability that an entering individual survives at least to time T is:

$$S_t = \prod_{t=1}^{T} p(t) = \prod_{t=1}^{T} F[ACOL_{it} + Q_i] \tag{2.8}$$

For an entire entry cohort, the survival rate through time T is:

$$S_t = \int_{-\infty}^{\infty} \prod_{t=1}^{T} F[ACOL_{it} + Q_i]\, dG(Q_i) \tag{2.9}$$

Note that the specification of the survival rate is the same as that in the Gotz-McCall model, except that the financial variable, ACOL, is used instead of the "stochastic cost of leaving" variable of their model.

If we assume that $Q_i \sim N(u_Q, S_Q^2)$, then $g=(Q-u_Q)/S_Q$ is a standardized normal variable with cumulative density $N^*(g)$, and

$$Q=S_Q g + u_Q$$

Since e_{it} is distributed normally, e_{it}/S_e is a standard normal variable. Finally, let Z be a vector of all other factors affecting reenlistment behavior, such as education and unemployment rates, with B a vector of parameters to be estimated. Making these substitutions and suppressing individual subscripts, we can rewrite equation (2.9) as:

$$S_t = \int_{-\infty}^{\infty} \prod_{t=1}^{T} F \frac{[(ACOL(t) + (S_Q g+u_Q) + BZ)]}{S_e}\, d\, N^*(g) \tag{2.10}$$

$$= \int_{-\infty}^{\infty} \prod_{t=1}^{T} F\, [(a_1 + a_2\, ACOL(t) + a_3 g + a_4 Z)]\, d\, N^*(g) \tag{2.11}$$

where $a_1=u_Q/S_e$; $a_2=1/S_e$; $a_3=S_Q/S_e$; and $a_4=B/S_e$.

Define the correlation coefficient, r, as

$$r = S_Q^2 / (S_Q^2 + S_e^2)$$

Then, $\sqrt{r/(1-r)} = S_Q/S_e$, which is the coefficient a_3. Hence, the coefficient a_3 in equation (2.11) measures the importance of unobserved permanent versus transitory factors in explaining reenlistment rates over time. When r=0 (S_Q is very small and S_e is very large), there is no permanent "taste" factor affecting retention rates over military service.[27] One could then model multiple reenlistment decisions as if they were independent events. Hence, the empirical specification of the original ACOL model, which ignores tastes, would not create problems due to unobserved heterogeneity in a multi-period case.

When r=1 (S_Q is very large and S_e approaches zero), unobserved heterogeneity or tastes dominate the effects of transitory disturbances. Reenlistment rates should rapidly approach unity after the first reenlistment point. Hence, controlling for tastes in a multi-period framework becomes increasingly important as r approaches 1. The fact that reenlistment rates in our analysis sample rise from 25% to 65% to 90% over the first three reenlistment points suggests a strong underlying self-selection process.

2.5.2 Comparison of the ACOL-2 and the ACOL Models

A contribution of the original ACOL model is that it addressed the "horizon" issue and focused attention on the individual-specific, unmeasured factors affecting reenlistments, the "taste" component. Unfortunately, the statistical procedures used to estimate the model could not accommodate

[27]Note that if r is very small, unobserved heterogenity is not a problem. Multi-period reenlistment equations can be estimated from cross-sectional data.

unobserved heterogeneity (tastes) implied by the theoretical formulation.

In a one-period model, such as an analysis of the first-term reenlistment decision, the assumption of an unobserved factor affecting the reenlistment decision does not create an estimation problem. The unobserved factor is included, along with other unobserved random components, in the error term in a statistical model.[28] But restricting analysis to first-term decisions is very limiting from a policy and force management perspective. However, in a multi-period model individuals who stay will tend to have a greater taste for military service than those who leave. Failure to adjust for unobserved heterogeneity may thus result in biased coefficients on the measured explanatory variables (e.g., ACOL) that are correlated with the changing taste distribution over military service.

The ACOL model has not been estimated in a multi-period reenlistment setting in a manner that controls explicitly for unobserved heterogeneity. Some of the early cross-section regressions included a year-of-service variable that attempted to adjust for changes in the taste distribution in an ad hoc way.[29] However, it is clear from examining the structure of equation (3.9) that panel data on accession cohorts is required to account and test for unobserved heterogeneity, especially when there are other time-varying explanatory variables in the model, such as ACOL itself.

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[28]This is appropriate as long as there is no cross-sectional correlation in the unobserved factors and the measured explanatory variables.

[29]See, for example, Warner (1979).

The ACOL-2 specification explicitly adjusts for the effects of unobserved heterogeneity in a statistically sound manner. Since the ACOL values are undoubtedly correlated with the changing distribution of the unobserved component over military years, this adjustment will remove this source of bias from the estimated ACOL coefficient.

2.5.3 Comparison of the ACOL-2 and Gotz-McCall Models

With the addition of the transitory component, the setup of the ACOL-2 model is identical to the Gotz-McCall model. The major difference is the calculation of the financial cost of leaving variable. In ACOL-2, the financial variable is the annualized difference between military and civilian pay, where the "horizon" (or additional years of service) is the one that maximizes the annualized difference between military and civilian pay. It is the financial variable found in the ACOL model.[30]

In the Dynamic Retention Model of Gotz and McCall, the expected return to staying is calculated as a weighted average of the returns to staying over all possible exit points. The "weights" are endogenously determined and represent the probability that the individual will leave at each of the respective years of service.

The computation of the expected returns to staying at least one more period in the Gotz-McCall formulation assumes that individuals know the distribution of the transitory component.

[30]The ACOL variable is recomputed for each reenlistment decision faced by the individual. The horizon will differ across decision points and across individuals if the time path of military and civilian earnings differ.

Based upon this (known) distribution and (known) future military and civilian pay streams, individuals compute the probability of leaving at each possible year of continued service. This computation of the financial incentive to stay is consistent with rationally formed expectations of the returns to staying at least one more period. However, estimation of the Gotz-McCall formulation is purchased at a price. The model is much less tractable for policy analysis, and less flexible in incorporating nonpay variables than is the ACOL-2 model.[31]

The empirical significance of the differences between the Gotz-McCall and ACOL-2 models depends on the changes in compensation being analyzed. For most general pay and bonus changes, and for many types of changes in the retirement system, they should generate similar predictions. However, for radical changes in the compensation system, such as a restructuring of the military retirement system, the Gotz-McCall model may generate better predictions, at least in theory. However, since the Gotz-McCall and ACOL-2 models are caricatures of the more complicated real world, one cannot say a priori whether these differences would necessarily be borne out in practice.[32]

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[31] See Chapter 3 for an elaboration of this point.

[32] Arguden (1986) analyzed the differences in predictions of the original ACOL model and the Gotz-McCall model for a number of alternative policy changes. He concluded that,

"...adding a taste proxy [to the ACOL] model (which is a function of the proportion of an entering cohort still in the military at a particular decision point) greatly improves the model's predictive ability [i.e., the predictions come closer to those of the Gotz-McCall model]. Estimation of a variance-components model along with the inclusion of a taste proxy is likely to reduce the biases even further. Any additional variable that explains some of the variance of the random shocks, such as the unemployment rate, is also likely to reduce the biases.

"The maximum regret nature of the ACOL model is the most difficult aspect to deal with. Fortunately, most retirement policies do not affect the second best time horizon differentially from the best time horizon. Therefore, this limitation does not prevent ACOL's use in analyzing the effects of most retirement policies."

3.0 MODEL DEVELOPMENT ACTIVITIES

The literature reviewed in the previous section suggests that there has been a significant amount of research concerning the relationship between military retention behavior and compensation incentives. However, as our critical review suggests, there have been serious methodological problems associated with much of this research. Specific problems include:

- **Longitudinal microdata.** Most of the models have been estimated using grouped data at a single reenlistment decision point. Microdata, observations on individuals, will produce more efficient parameter estimates, and only longitudinal microdata, data that tracks individuals over several reenlistment decisions, can avoid the potential bias that may result from unobserved heterogeneity.

- **Unobserved heterogeneity.** Unobserved factors, often loosely defined as "tastes for military service," have a systematic effect on retention behavior. Censoring that occurs at the enlistment point, over the first term of service, and at reenlistment points affects this distribution of unobserved factors. A major shortcoming of much of the earlier work is the failure to account for this censoring in estimating the effects of pay and other incentives on reenlistment probabilities. Ignoring this censoring results not only in poor predictions but biased estimates of compensation incentives because relative military compensation rises with tenure.

- **Civilian earnings.** Most previous research has used estimates of civilian earnings opportunities of military members that are from highly aggregated civilian data, unadjusted for sample selection bias. Use of this data in a model of retention behavior can result in biased and inconsistent parameter estimates due to errors-in-variables and sample selectivity.[1]

- **Simultaneity bias.** Shifts in policy variables, such as reenlistment bonuses, reenlistment eligibility criteria and waiver policy, and attrition policy, often are systematically related to shifts in supply. When this

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[1]Daula and Baldwin (1986) have recommended that "...the thrust of reenlistment research should turn to assembling better data sets with particular emphasis on civilian earnings data for veterans..."

occurs, it is difficult to disentangle supply from demand effects on retention. Failure to separate these effects will result in biased estimates of key incentives, such as reenlistment bonuses.

- **Quality Differences.** In most research, the responsiveness of retention to changes in pay, bonuses, and other incentives has been constrained to be the same across all types of members. If responsiveness varies by the quality characteristics of the members, estimates of the effects of compensation incentives will be biased for a given quality group. Controlling for the effects of quality differences in calculating military pay, but ignoring these effects on civilian pay, may result in biased pay estimates. The usefulness of various policy tools, such as reenlistment bonuses, may depend upon the relative responsiveness of high and low quality soldiers to changes in pay.

The new modeling developments outlined in this section address these, and other issues. The research strategy combines advanced methodological developments with proven methods, offering a balance between innovation and risk. The retention models developed here should provide accurate estimates of the effects of compensation incentives and other factors affecting reenlistment behavior, improving the information available for policy analyses and forecasting.

A "core" research program will be centered around the ACOL-2 model developed by SRA. This model, outlined in the previous section, is a panel-probit model of reenlistment behavior. It is a tractable method for accounting for the effects of censoring in the distribution of unobserved factors affecting the member's reenlistment behavior. It is has been previously estimated by SRA for Navy enlisted personnel and DoD civilians, but has never been estimated for the Army.

Using the proven ACOL-2 methodology, a basic model of the first and second term reenlistment decision will be constructed. Using this model, we will be able to examine policy issues such as:

- Effect of educational benefits on first term reenlistments;

- Effects of reenlistment bonuses on first term, and subsequent, reenlistment decisions;

- Effect that the Variable Housing Allowance (VHA) has had on retention.

The flexibility of the ACOL-2 model and the relatively small cost of estimating it will also allow us to explore the effects of alternative specifications. These effects are rarely examined, but this sensitivity analysis is important in interpreting the results, and in understanding the differences in parameter estimates across various studies.

A limitation of the ACOL-2 model, as discussed in the literature review, is its "single horizon" assumption. The Gotz-McCall dynamic retention model calculates a stochastic horizon that is a weighted average of all possible leaving points, where the "weights" are endogenously determined probabilities estimated using a dynamic program. The problem with the Gotz-McCall retention model is that it has been extremely difficult to estimate. Robert Moffitt's paper (Section 3.2) develops a version of the Gotz-McCall dynamic retention model and a suggested method of estimating this model that is much more tractable than previous methods.

Charles Brown's paper (Section 3.3) explores the implications for retention equation estimates and policy analysis if members of different "quality" respond differently to compensation incentives. This is an especially important issue during periods of austere budgets and possible reductions in force structure. Lower annual military pay raises may be sufficient to attract and retain the reduced <u>numbers</u> of people necessary to staff the Army, but the effectiveness of the Army will fall disproportionately if the best people leave.

Gary Solon (Section 3.4) and John Warner (Section 3.5) develop a hazard model specification for retention. A hazard model views losses as occurring continuously over time, while the panel-probit treats losses as occurring at discrete intervals. The hazard model, therefore, offers the potential for modeling the entire retention process -- attrition occurs continuously over the enlistment contract as well as voluntary decisions to leave that occur at discrete ETS points. This continuous time formulation is useful because it allows the analyst to predict expected manyears of service for military members, not simply whether they are likely to stay or leave over a particular interval. Though often criticized as a purely statistical approach to the retention problem, Solon-Warner derive a hazard model and provide an interpretation as the outcome of utility maximizing behavior. Their model also incorporates unobservable heterogeneity effects.

Frank Stafford (Section 3.6) is concerned with estimating unbiased civilian earnings opportunities for military members. Using social security data on the earnings of veterans who left military service, Stafford will estimate the civilian earnings opportunities for those military members at a reenlistment decision. The estimates will account for potential sample selection bias, since civilian earnings are observed only for those who leave military service, and will also permit the effect of total experience on civilian earnings to depend on the mix of civilian and military experience. His paper provides a theoretical framework considering the optimal length of military experience and its effect on civilian earnings. Stafford's results will be incorporated into all the empirical work on retention behavior of Army active duty members in this project.

From estimates of civilian earnings we turn to modeling military earnings. In Section 3.7, D. Alton Smith describes the essential features of enlisted compensation and presents a hazard model of promotion times. This approach, which builds up compensation from its components, facilitates the modeling of policy changes. It uses the pay table directly, given knowledge of an individual's expected promotion points, years of service, and dependents status, rather than estimating pay as a function of grade and YOS. Furthermore, promotion time models are interesting in their own right, apart from their relationship to compensation, as they reveal the relationship between promotion speed and performance.

Analysis of the reserve retention decision has been hampered by a combination of an underdeveloped theoretical framework and poor data. Paul Hogan's paper (Section 3.8) provides an institutional and theoretical framework for analyzing the retention decision in the Army Selected Reserve. Three choices are considered: stay in the reserves, leave the reserves, and enter active duty. The theoretical framework will be tested using the data from the 1986 DoD Reserve Component Survey, and matched data from the reserve personnel files indicating whether the reserve member remained in his unit, left service completely, or entered active duty service. There has been relatively little analysis of the reserves, despite their increasing importance, and this effort represents one of the few to combine a developed theory of reserve retention with a solid data base.

3.1 ARMY RETENTION MODELING USING ACOL-2

Paul F. Hogan and D. Alton Smith
Systems Research and Applications Corporation

The ACOL-2 model, described in some detail in Section 2, will be the baseline retention model in this research effort. The economic specification of the model builds upon the occupational choice theory framework developed in the Annualized Cost of Leaving (ACOL) model. The econometric specification is a "panel probit", using longitudinal microdata in its estimation. Independent, sequential probit models of the first, second, and higher term reenlistment decisions are implicitly nested within the panel probit specification.

ACOL-2 formulates the financial cost of leaving in a manner analogous to the Annualized Cost of Leaving model.[1] In this sense, it is a single horizon model and does not improve on the potential shortcomings of that assumption. The ACOL-2 model does control for unobserved heterogeneity -- unmeasured, persistent differences between individuals that affect their decision to reenlist. Failure to control for these differences may result in biased parameter estimates, poor predictions and erroneous policy conclusions in some instances.[2]

The ACOL-2 model will be estimated separately for three CMFs, one combat, one combat support, and one combat service, using longitudinal data on individual reenlistment decisions over the first two terms of service. The data will encompass reenlistments over the period FY 1975 through 1986. This will represent the first time that a model of Army reenlistment behavior has been

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[1] This variable is selected from a series of ACOLs, each of which is constructed as the present value of the difference between military and civilian pay, annualized over its associated horizon. The ACOL model uses the maximum ACOL value.

[2] Robert Moffitt's research explores feasible methods of estimating a model that both relaxes the single horizon assumption and controls for unmeasured heterogeneity effects.

estimated using longitudinal microdata covering the first and second reenlistment decision points.

The overall purpose of this research is to provide better estimates of the effects of personnel policies and incentives on the soldier's reenlistment behavior. However, to obtain solid estimates of the effects of these variables, we must clearly understand how the estimates are affected by the ways in which we attempt to measure them. The proven framework of the ACOL-2 permits us to focus on several important specification issues that are typically ignored in most studies of retention and compensation, and may have significant effects on the parameter estimates of key policy variables and their interpretation. These are discussed below.

Horizon Problem. What is the correct horizon to use in calculating the financial opportunity cost of remaining in the Army? To what extent are potential military retirement benefits considered in the member's decision to reenlist at the first and second terms? A choice of "horizon" defines the period over which military and civilian compensation are compared and the financial opportunity cost of reenlisting is calculated. This cost includes not only foregone civilian pay while remaining in the service, but any effect that the decision to stay will have on future civilian earnings opportunities. A fixed horizon has obvious computational advantages, and the "maximum ACOL" rule provides a non-arbitrary rule for choosing the horizon length.

However, intuition suggests that the individual would admit some positive, albeit small, probability of leaving at each possible leaving point, due to events that cannot be anticipated at the time of the reenlistment decision. The "stochastic horizon" described by Gotz and McCall captures this uncertainty, but the stochastic, dynamic program necessary to calculate pay over the stochastic horizon has proven to be almost intractable. Moffitt has proposed a more tractable dynamic programming approach that overcomes some of the theoretical limitations of ACOL and may allow estimation of a discount rate. We will test Moffitt's estimation procedure, and compare the results of the stochastic horizon model to that of the single horizon ACOL-2 specification.

Civilian and Military Earnings Specifications. Members choose between staying in the Army and entering the civilian sector based upon estimates of future military and civilian earnings that are necessarily imperfect. A useful working hypothesis is to assume that expectations are rational -- that is, military members make the best use of all available information to project unbiased estimates of future earnings. The researchers task, then, becomes that of building the best possible model to project the member's future military and civilian earnings.

Individuals will estimate their potential earnings based upon a number of factors, some of which the researcher will be unable to measure directly. If these unmeasured factors systematically affect the choices of military members, there is a potential for sample selection bias. For example, if the researcher were to infer potential civilian earnings of all military members based on the actual earnings of those who leave, the earnings estimates may be biased upward. Estimation of models of civilian and military earnings that provide the best forecasts suggests that controls for sources of bias, particularly sample selection bias, should be imposed. Frank Stafford will estimate the civilian opportunities of military members using data from members who have left the service and entered the civilian sector. His estimates will explicitly control for one source of bias -- the self-selection revealed by the choices of the member to stay or leave.

Similarly, econometric estimates of potential military earnings may be biased, since they are based only on observable characteristics of those members who choose to stay. Research conducted by Barton and Goon will attempt to adjust, at least partially, for the sample selection bias that results from estimating military earnings equations based upon those who stay.

The ACOL-2 model will be used to test the sensitivity of parameter estimates to alternative measures of the individual member's future civilian and military earnings.

Initial Taste Distribution. The ACOL-2 model and the dynamic retention model of Gotz and McCall represent the only attempts to adjust, systematically, for the effects of the censoring in the taste distribution[3] that occurs as entry cohorts move sequentially through reenlistment decision points. However, the versions of both of these models that have been estimated assume that the taste distribution for each cohort coming up to the first reenlistment decision is the same over time. Clearly, this will not be the case. The same self-selection process that occurs at the first term and subsequent reenlistment decision points will also occur at the enlistment decision point.

The taste distribution of the recruit cohorts at the entry point will vary depending upon relative pay and economic conditions at the time of entry and the values of various policy variables, such as enlistment bonuses and educational benefits. One method of accounting for this is to shift the assumption that the initial taste distribution is the same for each cohort back from the first term reenlistment point to the enlistment decision point. This would imply beginning the analysis by modelling the the enlistment decision as well as subsequent reenlistment decisions.

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[3]That is, the distribution of individual-specific, permanent, unobserved factors affecting individual retention decisions.

Such a model would be quite costly to estimate because of the data requirements. Longitudinal microdata would be required for a random sample of all potential entrants for each entry cohort.[4]

Instead, variables likely to affect the initial distribution of tastes, such as the aggregate civilian unemployment rate at the time of enlistment, educational benefits and enlistment bonuses offered as an inducement to enlist, and so forth will be included in the model. Inclusion of these variables will allow the taste distribution to vary among entry cohorts by shifting its mean. The key parameters of the model will be estimated with greater precision, and the model will predict better. Moreover, the effect of entry incentives, such as educational benefits and bonuses, on subsequent reenlistment decisions is of policy interest in itself.

Dependent Variable Specification. Comparison of estimation results in the econometric literature is frequently obscured by subtle, often unrecognized differences in the specification of the dependent variable. Some have specified a voluntary reenlistment decision as being conditional upon eligibility for reenlistment, while others have not made a distinction based upon eligibility. Reenlistments prior to the end of the term of obligated service (ETS) have been analyzed differently by different research efforts, as have voluntary extensions beyond the ETS point.

As part of this project, the sensitivity of parameter estimates to alternative specifications of the dependent variable will be examined. In addition, models that expand the reenlistment equation to a system of equations will be explored. These models include:

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[4]To have sufficient data for estimating the enlistment-reenlistment model, choice based sampling techniques would be necessary.

- o A model that adjusts for the potential endogeneity of reenlistment eligibility.

- o A multinomial choice model that expands the choice set to include extension, and possibly retraining, in addition to reenlistment and separation.

Additional CMFs. The estimation of retention models will be expanded in the future to other CMFs using the best methods and approaches distilled from our analyses of the initial set of CMFs in the project. Issues to be explored in this part of the analysis include the extent to which MOSs and CMFs can be aggregated both in estimation and forecasting to obtain a parsimonious set of retention equations that do not suffer from aggregation bias.

Finally, this core retention research will be integrated with the results of the other research efforts undertaken as part of this project. This synthesis of proven and new approaches should provide the best possible compensation-retention models for the Army.

3.2 NOTES ON THE ESTIMATION OF DYNAMIC RETENTION MODELS

Robert Moffitt
Brown University

I. INTRODUCTION

In this set of notes, I will discuss several issues in the estimation of dynamic retention models that are relevant for the project. My focus will be on the first-term retention decision to the exclusion of the second-term and later retention decisions, in line with where I believe our efforts will focus. In Section II I will discuss a simple model which incorporates the self-selectivity from attrition and enlistment that precedes the first-term retention decision. In Section III I will discuss an extension of the ACOL2 model of the retention decision that will allow the horizon to be stochastically determined. A dynamic programming (DP) model will be outlined which can be estimated relatively simply with the present ACOL2 software, or a slight modification of it, along with an additional piece of software that solves the DP model separately. The goal here is to specify a model that is relatively easy to estimate but which incorporates the main ideas of the stochastic horizon. Most of the discussion will be econometric but I will also make some remarks on the problems that will arise in implementation, and on the institutional issues as I am aware of them.

II. ENLISTMENT, ATTRITION, AND REENLISTMENT

The enlistment, attrition, and reenlistment decisions are closely intertwined from the point of view of the individual. The individual enlistment decision is based upon perceived probabilities of attrition and reenlistment and the pecuniary and nonpecuniary results of such events. Thus, future pay levels and bonus provisions, among other things, should be expected to have some effect on decisions even at the enlistment stage. However, the empirical magnitude of the relevant elasticities remains to be determined, and it may be that individual and environmental uncertainty is sufficiently great that such elasticities are small.

From the point of view of the econometrician, there is an additional problem that not all the variables affecting the decisions of the individual, or even those affecting the decisions of the recruiter and the Army during an enlistee's term, are known to the analyst. As a consequence, the unobservables affecting enlistment and attrition are likely to also affect the probability of reenlistment. This generates the potential selection bias problem attendant upon analyzing retention decisions only for those who have completed their first terms.

A simple model which captures these decisions is as follows:

$$Y^*_{ei} = X_{ei}\beta_e + \varepsilon_{ei}, \quad Y_{ei} = 1 \cdot \mathrm{Sgn}\ (Y^*_{ei}) \tag{1}$$

$$Y^*_{ai} = X_{ai}\beta_a + \varepsilon_{ai}, \quad Y_{ai} = 1 \cdot \mathrm{Sgn}\ (Y^*_{ai}) \tag{2}$$

$$Y^*_{ri} = X_{ri}\beta_r + \varepsilon_{ri}, \quad Y_{ri} = 1 \cdot \mathrm{Sgn}\ (Y^*_{ri}) \tag{3}$$

where the letters "e", "a", and "r" stand for enlistment, attrition, and retention, respectively. Each of the three equations is a standard probit equation with a vector of determining variables (X) and a coefficient vector (β). An individual who does not enlist is only observed to have $Y_{ei} = 0$; an individual who enlists but who attrites is observed to have $Y_{ei} = 1$ and $Y_{ai} = 0$; and individual who reenlists is observed to have $Y_{ei} = 1$, $Y_{ai} = 1$, and $Y_{ri} = 1$. With a unrestricted covariance matrix of the three error terms and with a normality assumption, the equation system can be estimated with trivariate profit. The correlations of the errors represent the influences of unobservables on the various decisions.

An alternative specification of the three error terms can be given which relates the model to that used in the ACOL2 model:

$$\varepsilon_{ei} = \alpha_1\mu_i + \nu_{ei} \tag{4}$$

$$\varepsilon_{ai} = \alpha_2\mu_i + \nu_{ai} \tag{5}$$

$$\varepsilon_{ri} = \alpha_3\mu_i + \nu_{ri} \tag{6}$$

where μ_i is an individual-specific error term and the α's are coefficients on that error term. With the ν assumed independent, the system in (4)-(6) is observationally equivalent to that in (1)-(3). However, the specification in (4)-(6) makes a bit clearer the assumption that there are permanent differences across individuals (tastes, nonpecuniary awards, productivity) but that the manner in which the unobserved characteristics of an individual affect enlistment, attrition, and reenlistment decisions are different and change over time. Individuals may decide they don't like the military after having enlisted, for example; this would show up as a difference between α_1 and α_2.

The specification in (1)-(3) suggests that the ACOL2 software (i.e., the Butler-Moffitt algorithm) may be useful in the estimation of this model. However, while it could be used, it is not the most efficient computational software if only three choices are present. In this case, evaluation algorithms for a trivariate normal probability are better.

Returning to (1)-(3), the simplifying characteristic of the model is the lumping of the attrition decision into a single one. The alternative is to attempt to model the time of attrition within the first term by means of hazard or other techniques. That could be incorporated here by expanding equation (2) into one with multiple periods. However, if attrition were the primary focus a more direct hazard approach would be preferred. But if retention is the primary focus, the summary attrition specification of (2) is sufficient to incorporate possible selection bias.

Given the data that we have, as is typical, data on non-enlistees are not available. This creates a problem because if (1)-(3) is the correct model and if equations (2)-(3) are estimated on enlistees only, selection bias will result. To eliminate that source of selection bias, the probabilities implied by (2) and (3) of attrition and reenlistment, respectively, can be conditioned on the probability of enlistment and maximum likelihood can once more be applied. Unfortunately, without data on non-enlistees, the model is not identified. A possible solution is to use estimated coefficients from some prior piece of research to set, a priori, the parameters in (1). If that were done, the model would then be identified (subject to the usual exclusion conditions--one variable must be omitted from (2) and two must be omitted from (3)) and even the covariance matrix parameters could be estimated.

Exactly how the X vectors in (1)-(3) should be specified remains an issue. For example, the ACOL methodology could be applied to the enlistment and attrition decisions just as it has been to the reenlistment decision. Alternatively, the ACOL methodology could be modified to allow a variable horizon and the X variables implied thereby could be entered. In the next section, I will consider these alternatives in the context of a retention decision only, but they are equally applicable to equations (1) and (2).

III. DYNAMIC RETENTION MODELS

In the ACOL methodology we have used in prior projects, an individual compares the present value of leaving at each point in time with the maximal present value of staying. The latter is calculated as the largest present value of staying taken over all possible future leaving dates. In what follows, I will allow a variable, stochastic horizon in standard fashion by writing down a dynamic programming model that will generate such. Then I will describe how it can be estimated relatively easily.

Assume that at each point in time, t--for concreteness, let us suppose that this is the end of the first term--the individual compares the expected wealth value of leaving to that of staying. The leaving value is V_t^L and the staying value is V_t^S, and can be written:

$$V_t^L = W_t^c + \sum_{\tau=t+1}^{T} \beta^{\tau-t} E_t(W_\tau^c) + \varepsilon_t^c \tag{7}$$

$$V_t^S = W_t^m + \beta E_t(V_{t+1}) + \varepsilon_t^m \tag{8}$$

where W_t^c and W_t^m are current civilian and military pay, respectively; β is the individual's discount rate; and T is the length of life. The military pay is that offered to the individual if he reenlists, and includes bonuses, etc. Equation (7) is just the present value of income if the individual leaves, plus an error term, and equation (8) is a dynamic programming equation in which $V_t = \text{Max}\ (V_t^L, V_t^S)$ is the value of the optimal program in the future.

Conditional upon V_t, equations (7) and (8) constitute a probit model. Defining

$$a_t = W_t^m - W_t^c + \beta E_t(V_{t+1}) - \sum_{\tau=t+1}^{T} \beta^{\tau-t} E_t(W_\tau^c) \qquad (9)$$

$$\varepsilon_t = \varepsilon_t^c - \varepsilon_t^m \qquad (10)$$

we get the decision model:

$$\text{Stay} \quad \text{iff} \quad V_t^S > V_t^L \quad \text{iff} \quad a_t > \varepsilon_t \quad \text{w. prob. } F(a_t) \qquad (11)$$

$$\text{Leave} \quad \text{iff} \quad V_t^S < V_t^L \quad \text{iff} \quad a_t < \varepsilon_t \quad \text{w. prob. } 1-F(a_t) \qquad (12)$$

where F is the normal c.d.f.

The value of the optimal program in the future is:

$$\begin{aligned} E_t(V_{t+1}) = {} & F(a_{t+1})\{E_t(W_{t+1}^m) + \beta E_t[E_{t+1}(V_{t+2})]\} \\ & + [1-F(a_{t+1})]\{E_t(W_{t+1}^c) + \sum_{\tau=t+2}^{T} \beta^{\tau-t-1} E_t[E_{t+1}(W_\tau^c)]\} \\ & + \sigma_\varepsilon f(a_t) \end{aligned} \qquad (13)$$

where f is the normal p.d.f. Thus the value of the optimal program is a weighted average, equal to the present value of staying times the probability of staying plus the present value of leaving times the probability of leaving. A third term is also present which represents the truncated value of ε_t in the future, since I assume that the individual expects to continue to draw values of ε_t in the future. Since he will always pick the better of his two alternatives, his average ε_t will be greater than zero.

The present value of staying at $(t+1)$ is a function of the value of the optimal program V_{t+2}. Equation (13) can be recursively solved back from time period T and an explicit expression obtained for it. When this is calculated, and when the result is plugged back into (9), we have a probit model. This probit model can be written out in full. Let S_t^* be a probit latent index for staying at time t. Then:

$$S_t^* = W_t^m + \beta E_t(V_{t+1}) - \bar{V}_t^L + \varepsilon_t \qquad (14)$$

where

$$\bar{V}_t^L = W_t^c + \sum_{\tau=t+1}^{T} \beta^{\tau-t} E_t(W_\tau^c) \qquad (15)$$

and where the solved-out optimal program is:

$$E_t(V_{t+1}) = \sum_{\tau=t+1}^{T} r_{t\tau}\beta^{\tau-t-1}\hat{W}^m_\tau + \sum_{\tau=t+1}^{T} q_{t\tau}\beta^{\tau-t-1}\bar{V}^L_\tau + \sum_{\tau=t+1}^{T} r_{t,\tau-1}\beta^{\tau-t-1}f(a_\tau) \tag{16}$$

where

$r_{t\tau} = \prod_{s=t+1}^{\tau} F(a_s)$ = probability (at t) that individual thinks he will stay in military at least until τ (17)

$q_{t\tau} = [1-F(a_\tau)] \prod_{s=t+1}^{\tau-1} F(a_s)$ = probability (at t) that individual thinks he will stay until $\tau-1$ and leave at τ (18)

$1-F(a_\tau)$ = hazard
= probability of leaving at τ conditional upon not having left by $\tau-1$ (19)

This formulation of the problem makes the nature of the model clearer than is often the case. The probit index in (14) is just a standard utility difference formulation. The decision to stay is based upon the current wage difference $(W^m_t - W^c_t)$ and on the difference in present values of future wages. The present value in the future if the individual stays has a coefficient β, whose estimate will tell us how much individuals weight the future versus the present.

Equation (16) shows the solved out value of the optimal future program. It is again just a weighted value of future military and civilian pay, each term weighted by the probability that the individual leaves the military at different dates.

Ordinarily these models are considered extremely difficult to estimate, but this model could be estimated relatively easily by the following iterative procedure. First, obtain initial consistent estimates of the probabilities of leaving and staying at each future date, and use these to establish estimates of (17)-(19). Second, use these estimated probabilities to calculate a value of (16) for each individual in the sample. The inputs to this calculation are the same as those used to compute an ACOL value; the only difference is that a weighted present value is calculated rather than choosing the maximum of the present values over all leaving dates. Third, using these estimated values in (14), estimate that equation with probit or with the ACOL2 program if multiple decision points are available. Fourth, using the resulting estimates, compute new probabilities in (17)-(19). Follow the same procedure, and iterate to convergence.

There are at least two possible sources of the initial consistent estimates of the probabilities. First, the ACOL2 program could be estimated first, and its predicted probabilities could be used. Subsequent iterations would have to use the probabilities estimated from the model itself, however. Parenthetically, it would be of considerable interest to determine if the predicted ACOL2 probabilities differ in any significant way from those obtained by the convergence of this model. Alternatively, the initial probabilities could be obtained in the way usually obtained in maximum likelihood--by guessing at initial values of the parameters.

Another possibility is simply using estimated ACOL2 probabilities and stopping there--i.e., not iterating. The only disadvantage of this procedure is that one would not know if the ACOL2 probabilities are internally consistent with the rest of the estimated parameters of the model.

The software modifications necessary to follow this procedure are relatively minor with one possible exception. The ACOL2 software, or a standard nonlinear probit program, could be used to estimate the main equation. A slight modification in the program would be necessary to obtain correct standard errors, by calculating numerical gradients once. However, a separate program would be necessary to construct the probabilities, at least after the first stage, which is not necessary now. This would require solving the dynamic program by backwards recursion to get the values of "a_t" in the model. However, this could be simplified by specifying only a few future decision points, such as five or six. A program to construct the present values in (16) would also be necessary, but such a construction is already necessary for the ACOL model. The important point is that the construction of the probabilities and the present value variable is performed outside the iterative estimation of the main stay/leave equation, and hence would not involve inordinate quantities of CPU time.

Other Issues. Whether the ACOL2 software is necessary depends largely upon whether multiple decision points are to be examined. If only the first-term reenlistment decision is examined, only a single probit is necessary and hence the ACOL2 software is not needed (and individual effects cannot be estimated anyway). If the second-term and later reenlistments are to be examined, the ACOL2 software might be usable, but my guess is that we will probably not examine those decision points in detail. If the enlistment and attrition decisions are added, as in the model presented in Section II, the ACOL2 software could be used but would be inefficient, as bivariate or trivariate probit would be superior.

As the model stands, there are only two known parameters, β and σ_ε. Just as in the ACOL2 model, the best way to relax this is to allow the error term in equation (14), ε_t, to be a function of individual characteristics. A difficulty will arise if any of the characteristics are allowed to be time-varying, but this can probably be addressed.

A further relaxation of the model that might be of interest is the allowance of a more flexible form of time discounting, e.g., by allow the discount factor to decline at some rate other than exponential. This would be relatively straightforward and could be incorporated by introducing multiple β parameters. This would allow us to test whether income values at various future dates do or do not truly affect current decisions. As the model stands, since there is only one β parameter, and it will be estimated to be either statistically significant or insignificant, one is forced to conclude either that all future income (civilian pay, military pay and promotions, civilian and military retirement) are perceived by the individual in his current decision, or they all are not. It would be preferable to test which, if any, do or do not affect current decisions.

Allowing a change in MOS, as in Tom Daula's dissertation, could also be incorporated, at least in principle, into the model. At time t there would be three decisions (leave, stay in same MOS, change to a new MOS). A bivariate probit estimating technique would have to replace the standard univariate probit. The value of the optimal future program would differ according to one's assumptions of future options. The simplest assumption would be that the individual could not change MOS again in the future. A complicating factor is that one would probably want to allow civilian earnings to depend upon the MOS an individual is leaving from; this is presumably one of the reasons for changing MOS in the first place, and why individuals are willing to forego bonuses.

The calculation of civilian and military pay in the future presents many issues, though none that are not also present in the ACOL model. It is preferable to obtain both civilian and military pay free of selection bias, for example. Also, an issue with military pay is whether it should be assumed to be stochastic or nonstochastic. I will not spend any space discussing these issues, as they are secondary to the primary modeling issues I have already introduced.

3.3 THE QUALITY DIMENSION IN ARMY RETENTION

Charles Brown
University of Michigan

Studies of enlistment and of retention offer a striking contrast in the treatment of the "quality" of those who are enlisting or contemplating re-enlistment.

The standard model of enlistment behavior (Fisher (1969), DeVany and Saving (1982), Ellwood and Wise (1987)) has the number of high-quality recruits as being driven by supply (the Army typically will take as many as wish to enlist), but the number of lower-quality enlistees is rationed by the Army so that total enlistments are equal to enlistment targets.[1] Since the earliest days of the All-Volunteer Force, the policy-relevant question for research has been the ability of the Army to attract sufficient high quality enlistments at politically realistic budget costs. The quality (measured by AFQT (test scores) and high school graduation) of enlistees is a prominent part of the Secretary of Defense's report to Congress each year. [references]

Studies of re-enlistment (or, more broadly, retention)[2] pay much less attention to the quality of those who re-enlist. AFQT and high school graduation are often used as control variables in predicting re-enlistment but the quality issue is shortchanged in two surprising ways. First, the

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[1] Daula and Smith (1986) suggest that even high-quality enlistments reflect demand as well as supply forces.

[2] "Attrition" refers to failure to complete the term of service to which one originally committed; "extension" refers to a (typically) short remaining in the Army beyond one's term of enlistment without agreeing to a longer (typically 3–4 year) term of additional service. "Retention" can include re-enlistment, extension, or simply non-attrition.

implications of the estimates for the quality mix of re-enlistees under alternative policies are typically not developed. (An exception is Daula and Baldwin, 1986.) It is well established that increases in military pay or civilian unemployment rates will raise the number of high-quality enlistees and, given fixed force targets, the proportion of enlistees which is high quality as well (e.g., Brown, 1985 or Ellwood and Wise, 1987). There could well be a similar effect on retentions, but this possibility has not been systematically explored. Second, quality continues to be measured by AFQT and high school graduation in most retention studies, even though the Army has observed (and to some extent conducted written evaluations of) actual performance. (Recent studies are discussed in slightly more detail below.)

Institutional Issues

The military pay schedule (pay as a function of rank and time in service) is set annually by Congress and so does not vary, except perhaps with a considerable lag, with changes in the average quality of potential enlistees. The Army is more active in setting quality standards for new recruits. If, e.g., poor civilian employment opportunities produce an unexpected increase in enlistees, enlistment standards are raised to improve quality and avoid accepting more enlistments than are desired.

This policy of adjusting enlistment standards rather than pay means that different "cohorts" of enlistees differ in their average level of ability (and thus, perhaps, in the promotion prospects of an individual with given characteristics). Moreover, changes in the recruiting environment may alter the relationship between ability and tastes of different cohorts. For example, an increase in the civilian unemployment rate would be expected to improve the average quality of a cohort of enlistees, but may reduce the average "taste for the military", as inability to find civilian jobs leads some otherwise reluctant individuals to enlist.

During one's term of enlistment, pay depends only on the military pay schedule and one's rank (grade level) and time in service. Those who perform better presumably earn promotions more rapidly, but within pay grades salary does not depend on performance.

If the individual is in a military occupational specialty (MOS) facing shortages, a selective re-enlistment bonus (SRB) is offered as an inducement to re-enlist. The SRB is a multiple of current salary, with the multiplier varying over time and across MOSs at one point in time. Thus, SRBs make compensation more variable across MOSs, but do not change the relationship between pay and performance, which remain linked only indirectly via promotions.

SRBs are deliberately adjusted to maintain the desired flows of qualified enlistees (Hosek and Peterson, 1985, p. 21). It appears, however, that SRB's are <u>not</u> adjusted to variations in the quality of those re-enlisting.

One inducement to enlist is educational benefits, which are available to high school graduates (in some cases limited to those with scores in the top half of the distribution). A top benefit of [amount] is available to those who enlist in certain designated (combat) MOSs, while the benefit in other

MOSs is only [amount].[3] These educational benefits are heavily advertised and make enlisting more attractive to more able high school graduates. However, they also make re-enlisting less attractive, since they raise potential civilian earnings of separatees who qualify for benefits. If the returns to education are higher for more able students (as [references] suggest), the educational benefits create perverse re-enlistment incentives among those eligible for such benefits.

In addition to individuals' desire to re-enlist, individuals' eligibility to re-enlist must also be considered. There are a variety of "bars" to re-enlistment: an inadequate GT score (a re-combination of the components of the AFQT) or the skill qualification test (SQT), having refused a geographic re-assignment, being court-martialed, being overweight, and having one's company officer take action to bar re-enlistment (Stafford, 1987). It is possible that these standards are adjusted to offset fluctuations in re-enlistment flows, with greater selectivity (tighter enforcement of bars) in periods (or MOSs) with high re-enlistment rates.[4] Thus, the impact of economic conditions or SRBs or other variables on the supply of re-enlistees would be understated if these changes in re-enlistment eligibility are

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[3] Benefits in earlier years, when the folks we'll study enlisted.

[4] Even if there is no change in re-enlistment standards, there might be a similar tightening of the standards used to initiate attrition (i.e., generate discharges during the term of service).

ignored. One problem in doing so is that bars to re-enlistment can be waived, but they typically will be waived only for those with an interest in re-enlisting.

Outline of Project

My project will study retention, emphasizing the quality of those retained, with "quality" rather broadly defined.

A generic retention model is

$$R = f(M, C, T)$$

where R=retention, M=military compensation (at least over the re-enlistment period and, in principle, with some weight given to subsequent periods), C=civilian compensation (again, in principle, including both civilian pay immediately available and that which is expected to be available at later future departure dates), and T stands for tastes.

Military pay depends upon the schedule of pay at various grades and years of service, as that schedule is expected to be in the future and one's estimate of the likely speed of promotion (i.e., where in the schedule the recruit expects to find him/herself). It also depends on the SRB available to those in the individual's MOS.

Civilian compensation depends on the general state of the labor market (in principle, for those with education, ability, and skills similar to those of the soldier deciding whether to re-enlist) —both wage rates and unemployment rates. As noted in the previous section, it also includes the educational benefits, if any, for which the individual qualifies on leaving the service.

Tastes, of course, are even harder to quantify. Observable variables which might be associated with the Army attracting relatively reluctant individuals as enlistees (such as unusually high unemployment, low civilian wages, and perhaps high expenditures on recruiters and advertising in the area where the individual enlisted) might serve as "taste" indicators. Other taste factors might be marital status and family size (spouses and particularly children making the relatively mobile soldier's life unattractive), and the MOS itself.

Various dimensions of the potential re-enlistee's "quality" enter M, C, and T. Presumably, promotion probabilities are higher for those whose performance is higher. Civilian alternatives, however, are also probably brighter for those who learned their skill well. Moreover, educational benefits are available only to those entering certain MOSs with good qualifications at time of enlistment — a high school diploma and top-half AFQT scores. One's "taste" for continuing in the military probably depends on how much one's work is appreciated. There is some evidence that early promotion encourages retention, above and beyond its effect on military pay. Finally, if the above re-enlistment equation is thought to apply to those eligible to re-enlist, such eligibility itself depends, at least weakly, on previous performance.

My project is based on the belief that studying the effects of various incentives (such as SRBs) on quality as well as number of re-enlistees is important if the Army is to achieve its goal of a high-quality all-volunteer force. A priori, the "marginal" re-enlistments generated by increased compensation could raise average quality (if it allows the Army to compete for those with the best civilian alternatives) or reduce it (if it interests those whose promotion prospects are so low that they would not otherwise consider re-enlisting). Previous studies have tended to include diploma information and AFQT scores as control variables, but generally have not asked how average AFQT (or, perhaps more interesting still, average SQT) changes in response to changes in SRBs (or other re-enlistment determinants).

Because quality issues were usually not the primary focus of earlier studies, summarizing and comparing their findings about how quality is related to retention is complicated by the variety of ways quality is assumed to influence—or not to influence—retention. In principle (and, I suspect, in reality) high school graduation, AFQT, and other quality indicators affect retention by affecting civilian pay, military pay (because promotion rates are presumably higher for more able individuals), and perhaps tastes. However, the interpretation of e.g., AFQT in a re-enlistment[5] equation

[5] Studies of attrition (Black and Frakker (1986), Antel, Hosek, and Peterson (1987)) typically do not explicitly control for M and C, so their typical finding that higher AFQT means lower attrition reflects its impact on M, C, an T, as well as its influence on the ability to satisfactorily perform ons's duties

depends on whether it was assumed by the authors to affect military and/or civilian pay. For example, Baldwin and Daula (1985) allow AFQT to influence C but not M or T, while Daula and Baldwin (1986) allow it to influence C and M (but again not T). Lakhani and Gilroy (1986) include AFQT in their re-enlistment equation but not in their estimates of M and C, so their positive effect of AFQT on R reflects a combination of all three possible routes. Ward and Tan (1985) have no controls for pay or personal characteristics apart from quality measures, but include promotion speed as a quality determinant. Holding promotion speed constant, their AFQT affects on re-enlistment presumably capture its effects via civilian pay and tastes. Black, Hogan, and Sylwester (1987) allow AFQT to affect M but not C and include it in their re-enlistment equation, so their AFQT effects have a similar interpretation to Ward and Tan's.

To further complicate matters, Lakhani and Gilroy and Black, Hogan, and Sylwester restrict their analyses to those eligible to enlist, while Baldwin and Daula, Daula and Baldwin, and Ward and Tan apparently do not. This means these last three studies' "AFQT effects" include its impact on the <u>eligibility</u> to re-enlist.

In addition to a direct interest in the quality of re-enlistees, it may also be important to handle quality issues carefully in order to get accurate estimates of the effects of various incentives on the number of re-enlistments. Consider two examples. First, suppose bad economic conditions lead to a cohort of highly-qualified enlistees. They have low attrition rates, the Army is not very worried about enough of them re-enlisting, and they are offered low SRBs. Although we hold constant AFQT scores of the individuals, an individual with a given AFQT score probably has a lower-than-average probability of promotion, because there are so many other highly qualified competitors. Thus, re-enlistments might be low for this cohort, and one might blame the reduced SRB for any decline in re-enlistments which is observed, even though the true cause is the lower promotion probability.

Second, most previous studies have ignored eligibility for educational benefits. These benefits are offered to high-quality enlistees in "hard-to-fill" MOSs, which are also likely to have SRBs. Thus, one risks underestimating the effect of the SRB by ignoring that it may serve to offset the incentive for separation provided by educational benefits. Indeed, if one ignores the fact that SRBs will go to those who could have claimed educational benefits had they not re-enlisted, the true cost of SRBs to the Army may be overstated.

An idea of the scale and focus of the project can be gotten from Table 1, in which equations for M, C, and T are specified, along with auxiliary equations for predicted promotion probability and SRBs. The auxiliary equation for predicted promotion probabilities is needed because one does not observe, ex ante, the promotion probability for an individual soldier; instead, we must calculate an estimate of that probability, based on the soldier's characteristics and the actual experience of, for example, the immediately preceding cohort(s). The auxiliary equation for SRBs, on the other hand, is included because I anticipate an instrumental-variable response to the endogeneity of observed SRBs.

For concreteness, one might think of this, at least initially, as a model for first-term re-enlistments. While my primary focus is on the quality dimension, and therefore on "more explanatory variables", I would try as time permits to take advantage of the work of other team members: Stafford on projected civilian earnings, Solon on more refined statistical models for dealing with heterogeneity, and SRA on measuring military pay and ACOL-2 improvements.

Data

With a few exceptions noted below, the variables described in Table 1 are available from the merged tape being produced by SRA, or can be derived from the variables on that tape.

Military Pay variables: At the simplest level, promotion probabilities can be gotten by tabulating actual data from the merged tape, which documents individual promotions. A potentially serious problem with this approach, which seems to have been ignored in previous work, is that those probabilities (at least as calculated in this simple way) apply to those who did in fact re-enlist, and not necessarily (indeed, probably not) to those who might re-enlist given different pay policies, etc. Fortunately, however, it appears that varying promotion speeds have a relatively minor impact on military pay. Since SRB's depend only on MOS (and vary over time), they can be matched to the MOS data on the merged file; I understand SRA is in the process of acquiring a complete file of SRB by MOS (and zone) over time. The pay schedule for each year is easily gotten. MOS demand by the Army can be gotten from MILPERCEN's Force Management booklet; I've seen the March 1986 booklet, and assume a similar document exists for other quarters.

Civilian Employment Environment and Environment at Enlistment: These depend on year and state (the former on state at time of enlistment and/or current location, the latter on state at time of enlistment). The more challenging part is getting data on wages, employment, and recruiting resources for all the years covered by the merged file. I was able to produce such variables for 1978–84 for Brown (1985), but it was very time-consuming.

Individual Characteristics: My understanding is that VEAP/ACF eligibility is hidden in the field "Program Enlisted For" in the merged file; if not, we should be able to infer it from education, AFQT, and MOS at entry. Marital status, dependents, education, and AFQT are on the merged file, as are promotion points for those who reach the relevant grade level. Finally, the SQT variables on the merged tape may be incomplete, but a file of SQT scores is rumored to have been gotten from ARI.

Cohort Variables: These just involve tabulation of individual variables.

Thoughts on Statistical Methods

At the simplest level — and surely as a benchmark for later efforts — one could estimate a simple logit/probit model of the re-enlistment decision, probably stratified by quality indicators to allow the response to policy variables to vary with quality in a fairly agnostic way.

At a more ambitious level, we might hope to estimate a hazard model using technology like Gary Solon's at the conference or the panel probit of Black, Hogan, and Sylwester. If the hazard model is "started" at time of enlistment, there is the problem that some of the more interesting quality measures (SQT and promotion points) are only available for those who "survive" long enough to have these measured. A model which handles this sample selection is frightening to contemplate, but perhaps feasible.

Two more general problems we should discuss, though not, I suspect, uniquely in the context of my paper are: (1) does it make sense to think of attrition and leaving on completing one's term as governed by the same process? My impression is that letting the systematic part of the model differ at re-enlistment points is probably do-able, but letting the unmeasurables have different impacts is much harder. (2) should we estimate models conditional on eligibility to re-enlist, or model this eligibility along with everything else?

Preliminar :-enlistment Model

Variable	Effect on: Military Pay	Civilian Pay	Tastes	Predicted Promotion Probability	Predicted SRB
<u>Military Pay Environment</u>					
Predicted Promotion Probability	+			*	
Predicted SRB Multiple	+				*
Pay Schedule	+			-	-
MOS Demand by Army				+	+
<u>Civilian Employment Environment</u>					
Civilian Wage at R		-		+	+
Civilian Unemployment Rate at R		-		-	-
<u>Environment at Enlistment</u>					
Civilian Wage at E			+	-	-
Civilian Unemployment Rate at E			-	+	+
Recruiters at E			-	+	+
Advertising at E			-	+	+
<u>Individual Characteristics</u>					
VEAP/ACF Benefits Eligible		+			
Married	+	+	-?		
Number of Children	+	?	-?		
High School Graduation		+	?	+	
AFQT Score		+	?	+	
SQT Score		+	?	+	
Promotion Points		+	?	+	
<u>Cohort Variables</u>					
Proportion HSG				-	?
Cohort Average AFQT				-	?
MOS Dummies	Yes	Yes	Yes	Yes	Yes

<u>notes</u>:

+ and - indicate expected sign of the variable's impact (tastes measured so higher values increase re-enlistment probability.)

* means that this variable is the <u>dependent</u> variable for that column

In general, the table assumes that the effect of a cohort (not individual) variable on promotion or SRBs is opposite the individual variable's effect on re-enlistment.

In column 1, E means "at time and local area of enlistment" while R means "at time of re-enlistment, for both area of enlistment and area now stationed"; for the predicted promotion probability and SRBs, these variables refer to national values.

3.4 NOTES ON A DURATION MODEL WITH NONPARAMETRIC DURATION DEPENDENCE, TIME-VARYING REGRESSORS, AND SHIFTS IN THE DISTRIBUTION OF UNOBSERVED HETEROGENEITY

Gary Solon
University of Michigan

Notes on a Duration Model with Nonparametric Duration Dependence, Time-Varying Regressors, and Shifts in the Distribution of Unobserved Heterogeneity

In recent years, numerous economic researchers have developed and estimated econometric models for analysis of duration data. These models have been applied in studies of unemployment duration, length of welfare program participation, job tenure, and fertility, to name a few examples. The purpose of these notes is to describe a particular duration model that follows the recent continuous-time duration literature in adopting a proportional hazard specification that incorporates nonparametric duration dependence and unobserved heterogeneity. The novel feature of the model is that it allows the mean of the heterogeneity distribution to shift as a function of variables that influence entry into the relevant state. For example, in a data base on unemployment spells from several years, one would expect the distribution of unobserved characteristics of the unemployed to differ between expansion years and recession years. Similarly, in a data base on length of service of Army enlistees, one would expect the distribution of unobserved tastes and opportunities of the enlistees to vary with economic conditions at the time and place of enlistment. These notes present a model that allows for such shifting heterogeneity, discuss its potential application to length of Army service, and compare it to the existing ACOL-2 model of reenlistment behavior.

1. Notation

Let t denote duration in the relevant state (e.g., length of service), f(t) the probability density function of t, and F(t) the cumulative distribution function. Then $1-F(t)$ is the survival function, and $h(t) = f(t)/[1-F(t)]$ is the hazard function. The last two functions are related by the well-known identity

$$1-F(t) = \exp\,[-\int_0^t h(u)du]\,. \tag{1}$$

2. Proportional Hazard Specification

In the proportional hazard model, individual i's hazard function is specified as

$$h_i(t) = \lambda(t) \exp\,(\beta' X_{it}) v_i$$

where X_{it} is a vector of explanatory variables observed for individual i at duration t, β is the associated parameter vector, v_i reflects the effects of unobserved individual-specific characteristics that do not change over time, and the function $\lambda(t)$ reflects duration dependence not accounted for by variation over time in X_{it}. The matrix $(X_{i1}\ X_{i2}\ ...)$ will be denoted by X_i.

Some common treatments of $\lambda(t)$ are: the exponential model $\lambda(t)=1$ for all t, which assumes no duration dependence; the Weibull model $\lambda(t) = \alpha t^{\alpha-1}$, which assumes a constant-elasticity form of duration dependence; and nonparametric treatment of $\lambda(t)$, as suggested in Meyer (1986) and Han and Hausman (1986). The last approach will be discussed in detail below.

Some common treatments of the probability distribution of v_i are: $v_i = 1$ for all i, which assumes no unobserved heterogeneity; assuming the probability density function of v_i is

$$g(v_i) = \theta^\theta v_i^{\theta-1} \exp\,(-\theta v_i)/\Gamma(\theta) \tag{2}$$

where $\Gamma(\ )$ is the gamma function, so that v_i follows a gamma distribution with mean 1 and variance $1/\theta$; and nonparametric estimation of $g(v_i)$, as suggested in Heckman and Singer (1984). The model presented below extends the gamma-distribution specification to allow for shifts in the mean of the distribution of v_i.

3. Details of the Model

Time-varying regressors and duration dependence:

Let the duration continuum be partitioned into discrete intervals $(0,t_1]$, $(t_1,t_2]$, $(t_2,t_3]$,.... Assume that the time-variation in the regressors X_{it} can be adequately approximated by variation only across these discrete duration intervals, so that X_{i1} is the value of X_{it} during $(0,t_1]$, X_{i2} is its value during $(t_1,t_2]$, and so forth. Then equation (1) implies that the survival function at duration t_k, conditional on X_i and v_i, is

$$\begin{aligned}
1-F(t_k|X_i,v_i) &= \exp\{-\int_0^{t_k} h(u|X_i,v_i)du\} \\
&= \exp\{-[\int_0^{t_1} h(u|X_{i1},v_i)du + \int_{t_1}^{t_2} h(u|X_{i2},v_i)du \\
&\quad + \ldots + \int_{t_{k-1}}^{t_k} h(u|X_{ik},v_i)du]\} \\
&= \exp\{-[\int_0^{t_1} \lambda(u)\exp(\beta' X_{i1})v_i du + \ldots + \int_{t_{k-1}}^{t_k} \lambda(u)\exp(\beta' X_{ik})v_i du]\} \\
&= \exp\{-[I(t_1)\exp(\beta' X_{i1}) + \ldots + I(t_k)\exp(\beta' X_{ik})]v_i\}
\end{aligned} \tag{3}$$

where

$$I(t_j) = \int_{t_{j-1}}^{t_j} \lambda(u)du .$$

In the exponential model, $I(t_j) = t_j - t_{j-1}$; in the Weibull model, $I(t_j) = t_j^{\alpha} - t_{j-1}^{\alpha}$. More generally, as recommended by Meyer (1986) and Han and Hausman (1986), $I(t_j)$ can be estimated nonparametrically by estimating each of $I(t_1)$, $I(t_2)$, ... as a separate parameter. Then, of course, any particular parametric forms for $I(t_j)$, such as the exponential or Weibull models, can be tested as special cases.

Distribution of unobserved heterogeneity:

The conventional gamma-distribution specification for unobserved heterogeneity, shown in equation (2), standardizes the mean of the distribution to 1. A tractable generalization is to specify the probability density function as

$$g(v_i) = (\theta M_i)^{\theta M_i^2} v_i^{\theta M_i^2 - 1} \exp(-\theta M_i v_i)/\Gamma(\theta M_i^2) \tag{4}$$

where $M_i = \exp(\delta' Z_i)$, Z_i is a vector of explanatory variables, and δ is the associated parameter vector. Then v_i follows a gamma distribution with mean $M_i = \exp(\delta' Z_i)$ and variance $1/\theta$. This generalizes the conventional specification to allow the mean of the heterogeneity distribution to vary as a function of the observed regressors Z_i. For example, in the case of Army service, Z_i might include the unemployment rate at the time and place of individual i's enlistment, because the unemployment rate presumably influences the distribution of unobserved civilian opportunities and tastes for military service among those who enlist. The heterogeneity specification in equation (4) is really only an ad hoc parameterization of self-selection effects in initial enlistment, but it is a substantial improvement over the conventional model, which assumes no shifts whatsoever in the heterogeneity distribution.

Given the heterogeneity distribution in equation (4), one can integrate the conditional survival function in equation (3) over v_i to obtain a survival function conditional on only the *observed* variables X_i and Z_i. Defining

$$D_{ik} \equiv I(t_1)\exp(\beta' X_{i1}) + \ldots + I(t_k)\exp(\beta' X_{ik}),$$

this survival function can be written as

$$1 - F(t_k | X_i, Z_i) = \int_0^\infty \exp(-D_{ik} v_i) g(v_i) dv_i$$

$$= [(\theta M_i)^{\theta M_i^2} / \Gamma(\theta M_i^2)] \int_0^{\infty} v_i^{\theta M_i^2 - 1} \exp[-(\theta M_i + D_{ik}) v_i] dv_i$$

$$= [(\theta M_i)^{\theta M_i^2} / \Gamma(\theta M_i^2)][\Gamma(\theta M_i^2)/(\theta M_i + D_{ik})^{\theta M_i^2}]$$

by equation (8) on page 236 of DeGroot (1975). The survival function then simplifies to

$$\begin{aligned} 1-F(t_k|X_i,Z_i) &= [1+D_{ik}|(\theta M_i)]^{-\theta M_i^2} \\ &= \{1+[I(t_1)\exp(\beta' X_{i1})+\ldots+I(t_k)\exp(\beta' X_{ik})]/[\theta \exp(\delta' Z_i)]\}^{-\theta \exp(2\delta' Z_i)} . \end{aligned} \quad (5)$$

It follows that the probability that a completed duration lies in the interval $(t_{k-1},t_k]$ is

$$\begin{aligned} \text{Prob}(t_{k-1}<t\leq t_k|X_i,Z_i) &= F(t_k|X_i,Z_i)-F(t_{k-1}|X_i,Z_i) \\ &= [1-F(t_{k-1}|X_i,Z_i] - [1-F(t_k|X_i,|Z_i] \\ &= \{1+[I(t_1)\exp(\beta' X_{i1})+\ldots+I(t_{k-1})\exp(\beta' X_{i,k-1})]/[\theta \exp(\delta' Z_i)]\}^{-\theta \exp(2\delta' Z_i)} \\ &\quad - \{1+[I(t_1)\exp(\beta' X_{i1})+\ldots+I(t_k)\exp(\beta' X_{ik})]/[\theta \exp(\delta' Z_i)]\}^{-\theta \exp(2\delta' Z_i)} . \end{aligned} \quad (6)$$

Estimation:

Let P_i denote the contribution of the i^{th} individual to the sample likelihood function. If a completed duration t such that $t_{k-1}<t\leq t_k$ is observed for individual i, P_i equals the expression in (6). If observation of individual i's time in the relevant state is interrupted at duration t_k (for example, if individual i is still in the Army at the end of the observation period), then P_i equals the survival function in equation (5). For a sample of N independently observed individuals, the likelihood function is $L = \prod_{i=1}^{N} P_i$ and the log

likelihood function is $\log L = \sum_{i=1}^{N} \log P_i$. Maximum likelihood estimation maximizes L or log L with respect to the parameters of the model: β, δ, θ, and $I(t_1)$, $I(t_2)$, ...

Maximum likelihood estimation of this model is hardly simple, but it is a straightforward extension of the estimation problem in the conventional model without shifting heterogeneity. Furthermore, as will be discussed in the next section, this model is computationally *more* tractable than the ACOL-2 model presently used for analyzing Army reenlistment behavior. Comparison to the ACOL-2 model will be facilitated by writing out the probability of remaining in the relevant state beyond a duration of t_k given survival into the period $(t_{k-1}, t_k]$. Conditional on X_i and v_i, this "retention rate" is

$$\begin{aligned} R_k|X_i,v_i &= \mathrm{Prob}(t>t_k|X_i,v_i,t>t_{k-1}) \\ &= [1-F(t_k|X_i,v_i)]/[1-F(t_{k-1}|X_i,v_i)] \\ &= \exp(-D_{ik}v_i)/\exp(-D_{i,k-1}v_i) \\ &= \exp[-I(t_k)\exp(\beta' X_{ik})v_i]. \end{aligned} \tag{7}$$

Expression (7) is an alternative to a logit or probit specification for the probability of retention. Like a logit or probit specification, this probability specification is bounded between 0 and 1. Furthermore, it has the appealing feature that the retention rate is inversely related to $I(t_k)$, which tends to increase with the length of the interval $(t_{k-1},t_k]$. It stands to reason that the retention rate would be lower over a five-year interval than over a five-minute interval.

4. Comparison to ACOL-2

The ACOL-2 model of Army reenlistment decisions, described in Black, Hogan, and Sylwester (1987), specifies the retention rate in $(t_{k-1}, t_k]$, conditional on X_i and v_i, as

$$R_k|X_i,v_i = \Phi(\beta'X_{ik}-v_i)$$

$$= \int_{-\infty}^{\beta'X_{ik}-v_i} (1/\sqrt{2\pi})\exp(-u^2/2)du$$

where $\Phi(\ )$ is the standard normal cumulative distribution function. This model adopts a probit specification for the retention rate instead of the alternative specification shown in equation (7). The ACOL-2 model's survival function, conditional on X_i and v_i, is

$$1-F(t_k|X_i,v_i) = \Phi(\beta'X_{i1}-v_i)\Phi(\beta,X_{i2}-v_i)\ldots\Phi(\beta'X_{ik}-v_i). \tag{8}$$

The probability that a completed duration lies in the interval $(t_{k-1},t_k]$ is

$$\text{Prob}(t_{k-1}<t\leq t_k|X_i,v_i) = \Phi(\beta'X_{i1}-v_i)\ldots\Phi(\beta'X_{i,k-1}-v_i)[1-\ \Phi(\beta'X_{ik}-v_i)]. \tag{9}$$

If a completed duration t such that $t_{k-1}<t\leq t_k$ is observed for individual i, let $P_i|v_i$ denote the expression in equation (9). If observation of individual i's duration is interrupted at t_k, let $P_i|v_i$ denote the survival function in equation (8).

The ACOL-2 model assumes that the unobserved heterogeneity variable v_i is drawn from a normal distribution with mean 0 and variance σ^2. Then the i^{th} individual's contribution to the sample likelihood function can be written as

$$P_i = \int_{-\infty}^{\infty} (P_i|v_i)(1/\sigma)\phi(v_i/\sigma)dv_i$$

where $\phi(\ )$ denotes the standard normal probability density function. The i^{th} individual's contribution to the likelihood function therefore involves a product of normal distribution functions, as shown in (8) or (9), which then must be integrated over the normal density of

v_i. For a sample of N independently observed individuals, the likelihood function is $L = \prod_{i=1}^{N} P_i$ and the log likelihood function is $\log L = \sum_{i=1}^{N} \log P_i$. Maximum likelihood estimation maximizes L or log L with respect to the parameters β and σ^2.

The new model presented in these notes has three advantages over the ACOL-2 model. First, its computation will be less cumbersome. Unlike the ACOL-2 model, which requires complex numerical integrations of normal distributions, the new model has relatively simple closed-form expressions for contributions to the likelihood function. These are shown in equations (5) and (6). Second, unlike the ACOL-2 model, which assumes that v_i is drawn from the same distribution regardless of economic conditions or other circumstances at the time and place of initial enlistment, the new model allows the mean of the distribution of v_i to shift as a function of the observed regressors Z_i. Third, as shown in equation (7), the new model generates a retention rate specification that naturally incorporates in the function $I(t_k)$ the effects of both duration dependence and the length of the time interval $(t_{k-1}, t_k]$.

3.5 ISSUES IN APPLICATION OF THE HAZARD MODEL TO ARMY RETENTION

John Warner
Clemson University

Issues in Application of the Hazard Model to Army Retention

As argued above, a major advance of the hazard model over previous retention models, including the panel probit (i.e., ACOL-2 model) model, is its ability to deal with the conditions at entry and their consequences for later retention. Also unlike previous military retention models, which focus only on retention (or quit) rates within reenlistment decision windows, the model has the further capability of dealing with survival (or attrition) in other windows. This section discusses issues in application of the model to military retention.

Treatment of the Baseline Hazards

The main problem in implementing the model is how to deal with the various time intervals that constitute different individuals' lengths of service. Army enlistees sign initial enlistment contracts that range between 2 and 4 years in length. Upon approaching their expiration of time in service (ETS) individuals may reenlist for a period of 3 to 6 years or extend their current contract for a period up to 2 years. Further complicating the problem is the fact that the length of the ETS window may have varied over time with service policy. That is, in some years, the Army may have allowed individuals to reenlist up to one year prior to their ETS date but in other years not allowed individuals to reenlist prior to the actual expiration of their enlistment contract.

In the hazard model, $I(t_j)$ is baseline hazard associated with time interval t_j. By treating it as a parameter, the baseline hazard may be estimated non-parametrically. If all individuals have the same lengths of enlistment/reenlistment, estimation of these baseline hazards would be simple.

When the lengths of initial enlistment/reenlistment vary over the individuals in the sample the problem arises that in a given interval t_j the baseline hazard may differ between those at ETS and those not at ETS. At first blush this problem does not appear to be too serious. Suppose we write $I(t_j)$ as $\gamma_j \exp\{\nu ETS_{ij}\}$ where ETS_{ij} is a dummy variable for whether individual i is at ETS in interval tj and γ_j and μ are parameters to be estimated. Then γ_j becomes the baseline hazard for all observations and $\exp\{\mu ETS_{ij}\}$ is a shift variable that is absorbed into $\exp\{\beta' X_{ij}\}$. The hazard rate for individual i at time interval t_j is

$$h_i(t_j) = \gamma_j \exp\{\mu ETS + \beta' X_{ij}\} v_i.$$

Estimation proceeds as before with the ETS dummy among the set of time-varying regressors.

Effects of Personal Attribute Variables in ETS and Non-ETS Windows

A problem related to the estimation of the baseline hazards is that the effects of various regressors (e.g., education , mental group, etc.) may vary considerably between between ETS and non-ETS decision points. Previous first-term survival studies find, for instance, that the probability of completing the initial term of service is positively related to education level and mental group. But previous retention studies find that retention varies inversely with education and mental group. At first blush this problem does not appear to be serious: we simply interact the variables X_{ij} with the dummy for whether or not the individual is in an ETS window. The hazard rate for individual i at time t_j is thus

$$h_i(t_j) = \gamma_j \exp\{\mu ETS + \beta' X_{ij} + \pi ETS * X_{ij}\} v_i.$$

Regressors

The model allows two types of variables to influence the retention rate at time t: initial entry condition variables (summarized by the vector Z_i) and time-varying regressors (X_{ij}).

Variables in Z

The model allows the mean of v_i (the unobservable heterogeneity factor) to vary with external environmental factors that influence the initial enlistment decision. We may show that as v_i (or its mean M_i) increases, the probability of surviving to any given time period t decreases (see, e.g., equation 5). Heuristically, a rise in M_i indicates a larger average net taste for civilian life among the entering cohort. For example, if a rise in the civilian unemployment rate increases the number (or more likely the quality) of the initial enlistment cohort, the mean preference for civilian life among those entrants will probably have increased since the cohort has individuals who would not have enlisted had the civilian unemployment rate been lower.

In addition to civilian unemployment, there are a number of initial entry condition variables whose effects we may wish to estimate. One variable of keen policy interest is educational benefits. Educational benefits have fluctuated substantially in the past 10 years. The available evidence suggests that the quality of the enlistee pool has varied considerably in response to fluctuations in educational benefits. While improved educational benefits increase the quality of Army accessions, it is important to discern how retention is affected. The conventional wisdom is that while higher educational benefits may improve the quality of the accession pool, they lead to lower retention.

An issue to be considered, however, is whether the relationship between educational benefits (or other variables in Z) and survival to a given time interval t_j is monotonic, as the model specification suggests. There may be an interaction between initial entry conditions and survival rates over different time intervals. For example, entrants who receive educational benefits whose receipt is conditional upon completion of some minimum period of service (e.g., 24 months) may have higher survival over the first two years even though they have lower first-term reenlistment rates.

From equation (5) the probability of survival to interval t_k is

$$S_{ik} = \{1 + [\sum_{j=1}^{k} I(t_j)\exp(\beta' X_{ij})]/\theta\exp(\delta' Z_i)\}^{-\theta\exp(2\delta' Z_i)},$$

which may be written as

$$S_{ik} = \{1 + [\sum_{j=1}^{k} I(t_j)\exp(\beta' X_{ij} - \delta' Z_i)]/\theta\}^{-\theta\exp(2\delta' Z_i)},$$

or, using the modifications to the hazard rate suggested above, as

$$S_{ik} = \{1 + [\sum_{j=1}^{k} \gamma_j\exp(\mu ETS + \beta' X_{ij} + \pi' X_{ij}{*}ETS - \delta' Z_i)]/\theta\}^{-\theta\exp(2\delta' Z_i)}.$$

Again, inclusion of an interaction between ETS and Z would allow hazard rates to vary according to whether the individual is at ETS:

$$S_{ik} = \{1 + [\sum_{j=1}^{k} \gamma_j\exp(\mu ETS + \beta' X_{ij} + \pi_1 X_{ij}{*}ETS - \delta' Z_i - \pi_2 Z_i{*}ETS)]/\theta\}^{-\theta\exp(2\delta' Z_i)}.$$

Variables in X

There are a number of time-varying regressors whose effects we may wish to estimate, including relative military pay, the civilian unemployment rate, in-service variables for occupational assignment/location, etc. The variable of keen interest here, of course, is relative military pay. There has been, and still is, considerable controversy about how to specify this variable. The two competing approaches are the ACOL approach and the Gotz-McCall dynamic programming approach. The ACOL approach derives the pay variable

$$A_{it}^* = \max\{A_{i,t+1}, \ldots, A_{i,T}\}, \text{ where } A_{i,t+n} = [RS_{i,t+n} - RL_{it}]/\sum_{j=1}^{n} 1/(1+d)^j$$

where n = a given period of additional military service,

$RS_{i,t+n}$ = PV of military wage stream if individual i stays from period t to period t+n and then leaves,

RL_{it} = PV of civilian earnings + PV of military retirement benefits if the individual leaves immediately,

d = personal discount rate.

The ACOL approach thus is to (1) calculate the PV of the future earnings streams from all possible periods of future service, (2) calculate the "cost of leaving" $C_{i,t+n}$ as the difference between $RS_{i,t+n}$ and the PV of the return to leaving immediately, RL_{it}, (3) annualize these differences and (4) choose the maximum. The maximum value A* represents the largest possible military-civilian wage differential from continued military service. The ACOL approach thus assumes that individuals evaluate the income streams available from all possible periods of future service and make their retention decisions based on the one horizon that provides the largest possible annualized military-civilian wage differential.

The Gotz-McCall approach argues against the notion that all individuals' retention decisions are based on a single dominant time horizon that provides maximum annualized return. Their derivation of the wage variable is based on two considerations (1) different individuals have different propensities to stay based on unobservable factors (what is labeled v_i above) and individuals with stronger preferences for military life (smaller values of v_i will tend to have longer time horizons, but (2) because individuals recognize that random factors may induce them to leave in each period, there is no single horizon of future service that provides the basis for a given individual's retention decision. Rather, the pay variable in the Gotz-McCall setup is (loosely speaking) a probabilistic weighting of the returns to staying over different future horizons minus the returns to leaving immediately. This pay variable which in some descriptions of the Gotz-McCall model has been called SCOL (for stochastic cost of leaving) is:

$$SCOL_i = \sum_{n=1}^{N} p_{i,t+n} RS_{i,t+n} - RL_{it}$$

where $p_{i,t+n}$ is the probability that individual i will stay from period t to period t+n and then leave (these probabilities sum to unity). These probabilities are individual-specific, depending on preferences (the v_i) and the probability density of stochastic factors that influence the retention decision in each time period.[1]

The Gotz-McCall approach has certain theoretical advantages over the ACOL approach which need not be repeated here. Despite the theoretical advantages, the ACOL approach has been utilized more extensively in empirical work because of its ease of calculation. In the (faithfully followed) Gotz-McCall approach construction of the pay variable cannot proceed independently of estimation, making estimation cumbersome. The further difficulty has been that their estimation procedure does not permit the inclusion of other variables (either other X's or Z's).[2]

Because of its theoretical advantages, the Gotz-McCall approach ought to be adhered to as closely as possible. A feasible approach has been recently suggested by Robert Moffitt in the context of the ACOL-2 (panel probit) model. Simply estimate the panel probit model in a first stage using ACOL as the pay

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[1] This characterization of the Gotz-Mcall approach is rather loose since in their model the pay variable is calculated recursively in a dynamic program and involves some terms must be ignored to obtain the above expression. Nevertheless, this approximation to their pay variable is close.

[2] The ACOL-2 model was an improvement in that it allowed the estimation of effects of other variables.

variable. Simulate the model to calculate each individual's probability of staying to each possible future period and then leaving (i.e., calculate the p's in the above equation for SCOL), use these probabilities to calculate SCOL, and reestimate the model with SCOL as the pay variable. The same procedure could be utilized here.

3.6 CIVILIAN EARNINGS AND THE OPTIMAL DURATION OF AN ARMY CAREER

Frank P. Stafford
University of Michigan

Civilian Earnings and the Optimal Duration of an Army Career

An important component of the economic benefit to military service is improved post-service earnings in the civilian labor force. This fact combined with a commitment to having a relatively youthful armed force creates a special set of requirements for an optimal compensation and training policy for the U.S. Army. Rather than being an employer with an interest in retaining employees for most of their worklife, the Army is an employer with an interest in shaping a training and compensation policy to induce an optimal duration of military career which should commonly last for only a part of the person's worklife, but for a sufficiently long duration to recoup the investment in training costs and to contribute to Army objectives. In these notes the attachment of a person to a particular employer for only a portion of his worklife is referred to as a partial career.

One can imagine private sector employers with a similar objective. For example, law firms often attract new graduates by a combination of salary and opportunities to acquire on-the-job training and expect these "recruits" to turn over. At some point it is rational for these people to switch to another employer who will pay for their previously acquired skills, and it is this subsequent payment which in part motivates their acceptance of the initial employer's offer. Other examples are easy to think of. New faculty at research universities or teaching fellows accept employment in return for both current compensation as well as enhanced future compensation which will often be paid by a subsequent employer.

One special reason why what here will be called a partial career is widely optimal for many military occupations is because the value of service depends on the ability to mobilize the existing force to diverse and demanding locations, placing a special value on physical condition of the force. Since this latter characteristic is generally age-specific there is much more interest in partial careers by the Army. On the other hand what the Army should seek to avoid are dropouts and quitters, both of which absorb training resources and compensation which have a greater present value than the stream of services they provide. Here we define dropouts as those recruits who turn out to perform below expectations and quitters as those recruits who meet or exceed expectations but who fail to reenlist under the existing compensation regime.

In these notes a model of the optimal duration of tenure or partial career with what is called a teacher-employer is set out, and its application to the Army is discussed. It turns out that some of the critical information needed to implement such a model includes the post-military earnings of the alumni by those in different military occupational specialties (MOS's) as a result of differing years of service in those specialties, the value to the Army of those with different years of experience in particular MOS's, civilian earnings absent military service, and Army compensation for additional years of service by MOS. As an econometric and policy implementation problem, one of the difficulties is that of observing person-specific values of both civilian alternatives and value to the service.

I. A Model of Optimal Career Duration in the Army

Earnings at time t (E_t) depend on whether one is in the military (m_t) or in the civilian labor force ($1-m_t$), the military pay rate, which is the flow of compensation per unit time with bonus values transformed and included in this flow (P_t), the stock of skills relevant for the civilian labor force (C_t), and the wage rate per unit of civilian labor force skills (g):

$$E_t = m_t P_t + (1-m_t) g C_t. \quad (1)$$

In (1), m_t can be thought of as restricted to being either 1 or 0. This complicates the analysis a bit, and for expositional purposes we will operate as though m_t is a continuous variable over the interval 1-0. (It is planned that later the implication of having m_t as restricted to either 1 or 0 will be explored.) In addition to providing military earnings and benefits, military experience in a particular MOS builds up both civilian labor market capacity as well as military capital. The buildup of civilian capital is given as:

$$\dot{C}_t = a(m_t C_t)^B \qquad \text{where} \quad 0 < B < 1. \quad (2)$$

Military service in a particular MOS builds up military skills according to the following relationship:

$$\dot{S}_t = d m_t S_t - f m_t S_t^2. \quad (3)$$

In (3) the parmeters are such that once the stock of military skills reaches d/2f there can be no additional acquisition of these skills and only the compensation and future civilian benefits of military service motivate retention.

The Army places a value of v on each (flow) unit of services provided by the enlistee, and therefore the rate of flow of net gain is given by:

$$G_t = vm_tS_t - P_t. \tag{4}$$

From (4) we have that the net gain to the Army over the enlistee's career is given as:

$$A = \int_0^{t_*} G_t \, dt, \tag{5}$$

where t_* is the end of the planning horizon for the Army, which for sake of concreteness may be thought of as age 40.

The Army seeks to maximize A subject to the transfer utility or maximum which an enlistee could realize without a partial career in the military. This alternative minimum, which we will call R_o can be written as:

$$R_o \leq \int_0^T E_t \, e^{-rt} \, dt = R, \tag{6}$$

where T is the end of the planning horizon for the individual which for the sake of concreteness may be thought of as age 60.

As set out in (6) the enlistee must acheive a net return, R, suffiently large that it exceeds the reservation utility which could be obtained with no military service. It is clear that there are some individuals in some specialities who should not be induced to join since their civilian alternatives are extremely attractive to them and there will be no military compensation and training path in the military which will acheive $R > R_0$ and $A > 0$. This is one of the basic arguments for an AVF, and when combined with individual differences in returns represents a major research question: who should and who will be induced to stay in the military and for how long as a consequence of alternative military pay structures?[1]

II. Remarks on this Type of Model

1. Research of the type by Goldberg and Warner (1987) is crucial here since it provides an empirical study of the relation between military experience and subsequent civilian earnings. Their work shows diminishing returns to additional years of experience in both military and civilian partial careers. This implies something of a natural equilibrium which has many people with some time in both sectors to exploit the high returns to early experience in each sector (aside from the negative interaction term on a variable interactying civilian and military experience). It might be instructive to take their estimated parameters in the post-service earnings equation and calculate the implied optimal switch points for a typical person. The additional ingredients would include simply noting that in a work horizon of $T = m + c$ (where m = years of military sevice by MOS and c = years of civilian service) years of military service are compensated at certain differing rates and that departure to the civilian labor force implies earnings as given by their earnings equation. What this type of exercise amounts to is determining what is the optimal switch point implied in a simple ACOL-type model of the average person in the DOD occupation.

What are some of the implications of the type of model set out above? Here the individual treats military pay (the path of P_t) as given and optimizes by choosing a military career (the path of m_t). Knowing this response of the individual, the military has to select a (unique?) optimal path for P_t. First order conditions for the individual include:

$$P_t + L_C aB(m_t C_t)^{a-1}$$

$$+ L_s[dS_t - fS_t^2] = gC_t. \quad (7)$$

From (7) we have the implication that current military effort is set so that the rate of military pay plus the future contribution of a unit of civilian market skills ($L_C[.]$) and the future contribution of a unit of military skills ($L_s[.]$) equals the return on civilian effort. If were to restrict m_t to be either 1 or 0, then m_t would be determined by whether at each point in time H_1 were larger for $m_t = 1$ or $m_t = 0$, where

$$H_1 = m_t p_t + (1-m_t)g_t$$

$$+ L_C\dot{C}_t + L_s\dot{S}_t. \quad (8)$$

To simplify discussion, suppose for the moment that the path of P_t were level. Let us consider some of the effects of differences in the parameters of the capital accumulation equations (2) and (3). If civilian skills are only weakly enhanced by military service (low values of a), then we would expect a smaller military effort (low m_t) which extends over a longer time period. This would lead to something closer to a full rather than partial military career, to use the term defined above. If civilian skills are strongly enhanced by military experience we would expect a larger military effort which is compressed into a shorter time period. (That is, if m_t is continuous then we would expect high initial values which decline quickly through time.)

Another aspect of (7) is the time path to net Army gains, G_t. Toward the end of a partial career it is easy to imagine that the individual may be overzealous in his military career in the sense that decrements to military capital are occuring ($S_t < 0$). From the Army perspective the person would be overqualifying himself as he seeks the benefits of future civilian employment with Army provided skills. Yet the opportunity to acquire these skills motivated retention in a prior period when the net Army gains were large. An attempt to curtail this behavior need not be in the Army's interest from the point of the cumulative net flow in (5).[2] Suppose that as a consequence of a project to assess military productivity (Project A) it were determined that productivity of those about to exit was often lower because of their interest in post-military career payoffs. In the intertemporal setting presented here, this may simply be one of the consequences of an optimal retention policy.

An important question which has not been evaluated for this model is whether there is a unique path for compensation to

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2. An issue which this raises is possible negative spillovers from having a work team in which some individuals are concerned with extramilitary payoffs. If this were the case, then the per unit payoff to the Army (v) would be lower.

encourage the optimum partial career from the perspective of the Army. Further, it may be useful to consider mechanisms outside of this framework such as issuance of certificates or degrees to be given upon successful completion of a length of service in a particular MOS. Those whose records were better in terms of both acquired skills and service to the Army could be given a degree or certificate with a higher rating. In this way there would be rewards to behavior other than monetary rewards. This seems particularly important if one takes the position that post-military compensation based on qualifications acquired in the military is one of the main motivations for Army service.

III. Conclusion

To conclude these notes, there seems to be some insight to be gained from thinking of an explicit framework which models the formulation of an optimal retention policy. Within this framework one can then turn to specific questions such as the relation between military service and civilian earnings, the relationship between military learning benfits and the nature of the partial career in the military, and the form of the optimum retention policy as well as its uniqueness. Even from this initial set of notes it is clear that careful study of post-military earnings of Army alumni of the type done by Goldberg and Warner is very important.

Research on post-Army earnings for more detailed MOS groups seem critical. Only through such information can one hope to set up an optimal retention policy. Further, this policy will have to face the difficult question of how much differentiation by MOS and individual skill level is compatible with some solidarity among members of the same organization. Practical experience and recent theorizing (Robert Frank) points to the difficulties of implementing an intraorganizational pay and compensation structure with dramatic differences in the treatment of individuals, even if a story on market alternatives suggests that these differentials are necessary.

These notes also indicate that there is a need to assess the path of within-the-army productivity of individuals by MOS with different levels of experience. From a broader perspective of labor economics research the problem faced by the Army is one also faced by numerous private sector businesses.

3.7 PREDICTING MILITARY COMPENSATION

D. Alton Smith
Systems Research and Applications Corporation

A key element in a structural model of military retention is the compensation expected by members if they continue their military careers. This paper describes how we propose to predict the military compensation of active duty enlisted personnel in the ARI Compensation Models Project.

1. MODELING MILITARY COMPENSATION

Enlisted military compensation includes the following components:

- **Basic pay.** Basic pay in any fiscal year is determined by an individual's years of service and grade. The basic pay table changes, at most, annually with military pay raises.[1]
- **Housing Allowances.** The Basic Allowance for Quarters (BAQ) varies by grade and dependent status and is only paid to enlisted personnel who are not furnished government housing. The Variable Housing Allowance (VHA), which is paid to soldiers in CONUS assignments who do not reside in government quarters, varies by the area of assignment. BAQ and VHA are adjusted annually.
- **Subsistence Allowance.** Enlisted personnel who do not have access to mess facilities receive a Basic Allowance for Subsistence (BAS). It is paid at a daily rate, which is the same for all grades.[2]
- **Tax Advantage.** BAS, BAQ, and VHA are not considered taxable income, increasing their value in comparisons with pretax civilian income.
- **Reenlistment Bonus.** Under the SRB program, which has been in effect for most of the AVF period, the reenlistment bonus varies with MOS and skill identifier, grade, the

[1]For most years in the AVF period, a pay raise increases all the elements of the basic pay table proportionately. In 1981, however, lower pay grades were given a proportionately higher pay increase.

[2]Soldiers assigned to locations outside of CONUS receive station allowances to compensate for the additional housing and subsistence costs in these areas.

length of the reenlistment, and the ETS date. In addition, the method of payment--lump sum or installments--has changed over time.

- **Retirement benefits.** Service members are eligible to receive retirement benefits if they separate with 20 or more years of service. For soldiers who entered before 1986, the annual benefits are calculated by multiplying an individual's annual basic pay (high 3-year average for accessions from 1980 through 1985) by .025 times years of service. Benefits are fully indexed to inflation.[3]

- **Special Pays.** If assigned to certain types of duties, members receive additional pay. Examples include flight pay and proficiency pay for recruiters and drill instructors. For the most part, these special pays are small relative to total compensation for Army enlisted personnel.

This quick review identifies the essential features of enlisted compensation needed to develop models; a more detailed description can be found in Hogan et al. (1988).

Two different strategies have been used to predict the real value of future military compensation for members at the reenlistment decision point.

The most common approach (see Black et al. (1987)) involves four steps. First, Regular Military Compensation (basic pay, allowances, and the tax advantage) for a cross-sectional sample of enlisted personnel is regressed against years of service and other characteristics of the member. Starting with the member's RMC at ETS, the coefficient on years of service is used to "grow" this part of compensation into the future. This procedure implicitly predicts how promotions and longevity increases affect future pay and allowances. Second, these predictions are adjusted for overall growth in real military pay using some assumption about

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[3]The retirement benefits for post-1985 entrants are 40% of high 3-year average basic pay at 20 years of service, rising to 75% at 30 years. Benefits are indexed to the growth rate in the CPI, minus 1 percentage point.

the member's expectations. For example, perfect foresight would imply that actual real growth should be used. Third, reenlistment bonuses and special pays, if applicable, are added to the RMC projections at the appropriate points in the member's career. Finally, retirement benefits are calculated for soldiers who are vested in the system.

The second approach, see Daula (1982), differs only in the way that RMC is initially estimated over the military career. First, the years of service at which a soldier will be promoted to grades beyond the one currently held are estimated, using average promotion times or a multivariate model of time to promotion. Knowing an individual's expected promotion points, years of service, and dependents status, values of RMC for future years of service can be calculated directly using the pay and allowance tables. As with the first method, these RMC predictions must be adjusted for expected real growth in military pay, and reenlistment bonuses, special pays, and retirement benefits added to the compensation stream.

The second approach, which we will use in the compensation models project, has three advantages. First, because total compensation is built up from its components, it is easier to model policy changes. For example, the effect of a new promotion policy on expected compensation can be evaluated by simply changing expected promotion times. In the RMC regression approach, changes in promotion times must be translated off-line into RMC differences. Thus, the extra effort required to estimate military compensation this way will have returns when the models are used for policy evaluation purposes.

Second, it is probably more accurate to use the pay table directly rather than trying to implicitly model differences in pay by grade and YOS in a regression. The regression approach smooths a compensation stream that, in reality, increases at discrete points. This could have an effect on retention model parameters.

Third, the issue of how the Army promotes its enlisted force is interesting in its own right. For example, if promotion speed reflects a soldier's performance, a positive correlation between promotion speed and AFQT strengthens the case for enlisting more high quality individuals (see Daula and Nord (1983)).

2. MILITARY COMPENSATION SOFTWARE

As part of the effort to estimate ACOL-2 models of enlisted retention, we are developing the software required to predict military compensation. Following the method outlined in section 1, this program has four parts.

First, parameters from hazard models of promotion times, estimated from the enlisted longitudinal files, are combined with an individual's characteristics to predict the year of service he will be promoted to grades 4 through 6. The characteristics used to predict promotion times will include variables such as MOS, entry cohort, race, sex, AFQT, education, marital status, and speed of promotion to the previous grade. The prediction of the promotion time to the next grade after the one currently observed for an individual will be made conditional on his current time in grade. That is, individuals with more time in grade will have shorter predicted promotion times, all other things equal. Section 3 describes the estimation of these promotion time models in more detail.

Because we can only observe a maximum career length of 14 years in the longitudinal data set, predicted promotion times to grades 7, 8, and 9 for soldiers in a given CMF will be based on average times calculated from cross-sectional data. While this approach is less accurate than estimating promotion time models for these grades, any prediction errors are heavily discounted in calculating military/civilian compensation alternatives at the first and second reenlistment decision points.

Using the predicted promotion times for an individual, we will calculate RMC through the 20th year of service using the pay and allowance tables at the reenlistment decision point. In doing this, we will make the following assumptions:

- o Dependents status will be as of the reenlistment decision date. Ideally, one would like to predict dependent status along with promotion times, but the data are limited in that the dates at which dependent status changes are not available.
- o Housing allowances (BAQ and VHA) will be included in all members compensation. The assumption here is that the value of government-furnished quarters equals the housing allowance.
- o Because of PCS moves, a member's current VHA is not necessarily the expected value of this benefit for his career. Consequently, we will use the Army average, by pay grade, for VHA benefits.
- o Subsistence will be included for all enlisted personnel.

In the second step, this RMC stream is adjusted for expected real growth in military earnings according to assumptions supplied to the program.

Third, reenlistment bonuses, if applicable, are added to adjusted RMC. (Because of their relatively small size, we will ignore any special pays for which a soldier may be eligible.) SRB multipliers have been collected by MOS, skill/additional identifiers, and zone for 6-month intervals covering the AVF period. The military compensation program "looks up" the correct multiplier and calculates the bonus amount using the individual's current monthly base pay and an assumed 3-year enlistment term. Depending on the bonus payment scheme in effect at the time, the bonus is added into compensation as a lump sum or installments.

Finally, military retirement benefits are calculated from an individual's basic pay and years of service at separation. Because soldiers who leave the service before 20 years are not vested, these benefits are only included in the military compensation stream when service exceeds 20 years.

3. MODELING PROMOTION TIMES

Hazard models provide a convenient statistical framework for studying promotion times because censored promotion times, which occur when a soldier leaves the Army before being promoted, can be incorporated into the estimation of the model. In this section, we describe the hazard model we will use for predicting promotion times and discuss how it might be extended to address a problem of sample selection.

Let $t_{i,g}$, the time from grade g-1 to g for the ith individual, be given by

$$\ln t_{i,g} = X_i B_g + e_i \tag{1}$$

where X_i is a vector of the member's characteristics, such as AFQT and MOS, and B_g is a vector of parameters to be estimated. If the error term, e_i, has a normal distribution with zero mean and variance s^2, promotion times are distributed log-normal. The log-normal distribution, with its centrally located mode and skewed right hand tail, seems to provide a reasonable characterization of the promotion times that would be expected for Army enlisted personnel. Time-in-grade requirements concentrate promotions around certain "windows", with exceptional performance leading to earlier than usual promotions and less-than-average performance resulting in longer promotion times.[4]

Promotion times to grade g will not be observed for all individuals because some will leave the Army through attrition or at the end of their term of service. These individuals can be incorporated into the estimation of the B's because we know that their promotion time must be greater than their time-in-grade at the point they left. In particular, the log-likelihood function for this model is

$$L = \sum_i \left[(1-c_i) \ln\{f(A)/s\} + c_i \ln F(-A) \right] \tag{2}$$

where $A = (\ln t_{i,g} - X_i B_g)/s$

f(), F() are the standard normal density and cumulative probability functions

c_i = 1 if the observation is censored, and 0 otherwise

The statistical package LIMDEP provides routines for maximizing this likelihood function.[5]

We will use the enlisted longitudinal files to estimate promotion models for grades 4 through 6. Separate models will be estimated for the infantry, mechanical maintenance, and administration CMF's. Potential explanatory variables in these models include:

- **MOS dummy variables.** Our preliminary work with cross-sectional data suggests that promotion time variation within a CMF is limited. We will test this hypothesis using the longitudinal files.

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[4]In their promotion time model, Ward and Tan (1985) assumed a log-logistic distribution, which has characteristics similar to the log-normal.

[5]The log-normal hazard model is described in Kalbfleisch and Prentice (1980).

- **AFQT and education.** These variables are of special interest because of the "quality" issue. Is quality, as measured by these entry qualifications, positively correlated with performance, as measured by speed of promotion?

- **Race and sex.** Controlling for other characteristics of a soldier, are promotions race- and sex-blind?

- **Marital status and dependents.** In civilian earnings regressions, marital status is usually correlated with observed earnings. Does the same relationship hold for promotion speed for Army enlisted personnel?

- **Time in service at last promotion.** Previous studies (Daula and Nord (1983) Ward and Tan (1985)) have found faster-than-average promotion to one grade is positively correlated with faster promotions in succeeding grades. We will include time in service at the last promotion as a cumulative measure of promotion performance.

- **Cohort dummy variables.** Given stable personnel requirements by grade, changes in accession cohort size (which have been substantial over the AVF period) will lead to different promotion times.

Model (1) will be used to predict promotion times for soldiers at ETS. For the first promotion, the time to promotion to grade g is predicted conditional on existing time in grade at ETS, which we denote as t_0. The formula is

$$E(t_g | t_g > t_0) = \exp(s^2/2 + X_i B_g) * F(A_0 - s)/F(-A_0)$$
$$\text{where } A_0 = (\ln t_0 - X_i B_g)/s \qquad (3)$$

This predicted time, along with other individual characteristics, is then used to predict the unconditional time to grade g+1, given by

$$E(t_{g+1}) = \exp(s^2/2 + X_i B_{g+1}) \qquad (4)$$

This procedure is repeated through grade 6.

While this model correctly accounts for the censoring that occurs because some E-4's, for example, leave the Army before they are promoted to E-5, it does not adjust for the fact that the observed group of E-4's is a selected sample because of separations before that career point. This sample selection problem parallels the more often cited selection problem with civilian earnings estimates in a retention model. That is, we must predict military earnings for all individuals at the reenlistment point. If those who stay in the Army, and are therefore available to use in promotion time models, are different in unmeasured ways from those who leave, biased predictions will result.

Model (1) can be extended to test for sample selection bias by jointly estimating the promotion time models for two successive grades. The model would be

$$\begin{aligned} \ln t_{i,g} &= X_i B_g + e_{i,g} \\ \ln t_{i,g+1} &= X_i B_{g+1} + e_{i,g+1} \end{aligned} \qquad (5)$$

where the e's have a bivariate normal distribution. If the e's are correlated, the time to promotion predictions from separately estimated models will be biased.[6]

We plan to rely on model (1) for our military compensation predictions and examine the sample selection problem in an auxiliary effort, with the help of ARI staff. Model (5) is significantly more difficult to estimate and, although interesting in its own right, will probably not change the predictions of military earnings substantially. First, because the pay increases associated with promotions are relatively small compared to

[6]Identification is a potential problem in estimating this model. One must either impose cross-equation constraints on the B's or exclude one of the X variables from the first equation to identify the model by more than just the functional form.

longevity increases, differences in promotion times do not lead to large differences in the discounted present value of military compensation. (See Daula and Baldwin (1986).) Second, model (1) will include a measure of lagged promotion times which helps account for differences in promotion experiences not associated with characteristics such as AFQT and MOS.

3.8 A REENLISTMENT MODEL FOR THE ARMY SELECTED RESERVES

Paul F. Hogan
Systems Research and Applications Corporation

1.0 INTRODUCTION

1.1 BACKGROUND AND MOTIVATION

The Selected Reserves in the Army and the other Services have become an increasingly important component of national defense in recent years. Their numbers have grown both in absolute terms and relative to the active component. Between FY 1981 and FY 1986, the number of men and women in the Army Selected Reserves have increased by about 146,000, or 24%.

Despite this already large increase, it is likely that budget pressure to substitute lower cost part-time manning (reserves) for more costly full-time manning (active) in some mission areas will continue. Considering their growing importance, relatively little is known about the potential supply of reservists. Regardless of one's views concerning the current levels and future expansion of the reserve component, it is clear that sound policy decisions will demand a better understanding of the supply of qualified people to the reserves, the factors affecting that supply, and the tools available to influence that supply than currently exists.

The Sixth Quadrennial Review of Military Compensation is reviewing the compensation system of the reserves. A solid base of theoretical and empirical research is necessary to evaluate the changes to the compensation and retirement system that the QRMC proposes. Such a research base is currently lacking.

Reserve reenlistment behavior, an important aspect of the overall supply of reserve manpower, is illustrative of the current state of our knowledge in this area. What qualifies as the conventional wisdom appears to be somewhat pessimistic for policy. The supply of reserves is relatively unresponsive to pay, within the likely range of variation, and is determined largely by institutional factors, such as the primary employer's policies the likely range of variation, and is determined largely by institutional factors, such as the primary employer's policies toward reserve participation. However, certain key institutional factors, such as the relationship between the reserve and the active duty compensation system, have not been captured in analyses to date. The empirical results have been limited by the poor data that has been available for the reserves, and by a relatively undeveloped theoretical framework for analyzing reserve participation.[1]

1.2 RESEARCH OVERVIEW AND ORGANIZATION

Our proposed research is intended to expand our knowledge of the reenlistment behavior of the Army reserves. It will do this in three ways:

(1) In this effort, we will examine the reserve reenlistment decision in the context of the household or family allocation of time between participation in the labor market and home production or leisure. It will expand upon the theoretical framework initially proposed by Rostker and Shisko (1976) for analyzing reserve participation decisions. This framework, based upon the economics of moonlighting, is expanded by including the spouse's labor supply decision as a substitute for reserve participation by the member. It will follow the model recently developed by Hogan et al for analyzing the active duty reenlistment decision from the perspective of the household or family utility maximization rather than the individual.[2]

(2) It will consider three possible alternatives: reenlist in the reserves, leave military service entirely, or enter full-time active duty service. Previous research has considered only the dichotomous decision of reenlist or leave. It has been estimated that about 20% of those leaving the Selected Reserves at the first term enter active duty.

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[1]The only theoretical framework that has been applied to the problem is the moonlighting model of Rostker and Shisko (1976). Moreover, most of the studies that have cited the moonlighting model have failed to specify and estimate a model of reserve reenlistment behavior that rigorously adheres to that theoretical framework.

[2]See Paul F. Hogan and Steve Siegel, "Family ACOL: A Household Model of Army Reenlistment Behavior", SRA Corporation, 1987.

leaving the Selected Reserves at the first term enter active duty. Because of the relationship between reserve and active duty pay, failure to consider this choice may have resulted in estimates of the effect of reserve pay on retention that are biased low.

(3) It will be one of the first research efforts to explore the potentially rich data presently becoming available from the 1986 DoD Reserve survey. We have asked the Defense Manpower Data Center (DMDC) to match the survey participants responses with actual personnel files, through October 1987. This matched file will allow us to relate the detailed information concerning the economic and socio-demographic circumstances of the reserve (and his spouse) to actual retention outcomes, as determined by the personnel data files. Moreover, if, in fact, the matching process indicates that the reservist has left his unit over the period of analysis, DMDC will search the records of (a) other reserve units and (b) active component gains files to determine if the reservist has joined another unit or has entered active duty full-time.

Our research proposal is structured as follows. Understanding the institutional environment is key to any research effort, and this is particularly true for one involving the Selected Reserves. The institutional features of the Selected Reserves relevant to retention behavior are briefly reviewed in Section 2. Section 3 critically reviews the published literature on the supply behavior of reserves, and discusses the implications for additional research. Our approach is developed in Section 4. A theory of reserve retention behavior is presented, estimation procedures are discussed, and extensions proposed. Section 5 discusses the data available for estimating a reserve retention model, particularly the 1986 DoD Survey.

2.0 INSTITUTIONAL FRAMEWORK

2.1 IMPORTANCE

An understanding of the institutional characteristics and compensation system of the Army's Selected Reserves is a crucial ingredient in developing a model of retention behavior. Because most researchers in the field know less about the Selected Reserves than the active forces, we review it in some detail.[1]

Salient institutional characteristics of the Selected Reserves that are important for modeling include the following:

- Selected Reserve participation is part-time.
- Reservists do not have the geographical mobility of full-time soldiers, so vacancies must be found in local units.
- Two categories of recruits may be distinguished--prior service and nonprior service.
- Prior service personnel can vest their active duty service for retirement by participating in the Reserves.
- The reserve enlistment contract may be a less binding constraint than an active duty contract.
- The flexibility of the reservist's civilian employer is an important influence in recruiting and retention decisions.

2.2 BACKGROUND

The reserve forces consist of units and individuals that can be ordered to active duty service upon presidential declaration of

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[1] Dr. David Grissmer, a leading authority on the reserves, has observed that the institutional details in modeling the reserve forces are even more important than for the active forces.

a national emergency.[2] As components of the reserve maintained in the highest state of readiness, Selected Reserve forces will be called first upon mobilization. The Army's Selected Reserve forces consists of men and women in organized units of the Army Reserve and National Guard and, in some instances, individuals who are not attached to a reserve unit per se.[3] The Army Reserve strength at the end of FY86 was about 309,700 while the strength of the National Guard was about 446,200. The typical soldier in the National Guard has somewhat more experience than his Army Reserve counterpart. In FY 1986, the average number of years of service of the enlisted force was 7.9 and 7.0 years, in the Guard and Reserve, respectively.

The ability of the Army Selected Reserves to recruit and retain personnel in the 1980's has been good. In FY 86, actual reenlistments exceeded goal by 7,700 in the USAR and by about 4,00 in the ARNG.

2.3 INSTITUTIONAL CHARACTERISTICS

The problem of recruiting and retaining people in the Selected Reserves is somewhat different from the problem in the active forces. An obvious and important difference is that service in the Reserves is part-time and must permit the member sufficient latitude to pursue a full-time civilian career under normal peacetime conditions. The constraints and demands placed on the actual or potential reserve member by his full-time

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[2] The President may call up to 100,000 Selected Reserves for active duty for a period not exceeding 90 days without declaring a national emergency.

[3] The Selected Reserve consists mostly of members who train together and will be deployed as units. However, some individuals, called Individual Mobilization Augmentees, will fill individual positions in active units upon mobilization.

civilian employer will exert a major influence on his decision to enlist or to remain in the Reserves.

Geographic Mobility. Recruiting and retaining people for the Selected Reserves presents geographical constraints not found in the active forces. If an individual wants to participate, a vacancy must be found in the local unit. If a member's full-time employer requests that he transfer to another city, the member is forced to end his relationship either with his current civilian employer or with his current reserve unit. If he separates from his unit and moves to another city, he may or may not find a vacancy in another reserve unit. Moreover, he may reaffiliate only after months have passed since his separation from the original unit. Simply accounting for separations presents a challenging data problem for force managers and analysts.

Prior and Nonprior Service. There are two distinct populations of recruits to the Selected Reserves: those who enter with no prior military service and those who affiliate with a Selected Reserve unit after separating from active duty. The distinction is likely to be of some analytical importance because the behavior and motivation of the two groups may differ significantly and systematically.[4] Prior to the reinstitution of a volunteer force, approximately 80% of Selected Reserve accessions were nonprior service recruits--recruits without prior active duty experience. The proportion of prior to nonprior service accessions increased dramatically during the early years of the All-Volunteer Force, reaching a peak of about 75% in FY74. Currently, the proportion of prior and nonprior service recruits is about even in the ARNG, while in the USAR prior service accessions account for about 60% of the total.

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[4] The reserve reenlistment bonus experiment, an evaluation of which is reviewed section 3, was limited only to nonprior service reserves.

Service Obligations. Nonprior service recruits typically enlist in the Reserves for 6 years of service. Nonprior service recruits pursue initial training, which lasts from 4 to 12 months depending on skill, on a full-time basis after entering the Reserves. Reservists typically complete 48 drills per year and spend 14 days on active duty (exclusive of travel time) each year. This places a time demand on them of roughly one weekend per month (a member can complete four drills in a weekend) and two full weeks in the summer.

Though reservists enlist and reenlist for fixed contract lengths, just as active duty personnel do, the contracts do not appear to be as binding as active duty contracts. If the individual moves away from his unit, for example, he is usually relieved of his commitment.

Private Employers. The flexibility and attitude of the member's civilian employer in permitting the member to satisfy the demands of reserve membership is a key aspect of the individual's choice to join and remain in the Reserves. The employer is required by law to allow the member time off to meet his reserve training commitment. The employer is not, however, required to pay the member for that time. Moreover, it is unlikely that any law can prevent an employer from discouraging participation in the Reserves if the employer believes that such participation is unprofitable to him and should be discouraged.

The net financial return from attending 2 weeks of active duty training will depend on the employer's leave policy. The employer may offer: (a) an additional 2 weeks of leave with full pay to attend training; (b) an additional 2 weeks of leave but pay equal to the difference between the individual reserve pay and his civilian pay; (c) 2 weeks of leave without pay; or (d) only the opportunity to use normal leave time. The results of a 1979 survey of reservists are reported in Table 2-1.

TABLE 2-1. EMPLOYER LEAVE POLICY TOWARDS RESERVISTS

Policy	Response (Percent)
Leave, no pay	35.7
Leave, difference in pay	25.7
Leave, with pay	22.2
Must use vacation	9.2
Reservists self-employed	7.1

2.4 SELECTED RESERVE COMPENSATION

Selected Reserve personnel share the same basic pay table as active duty members. Pay consists of one-thirtieth of one month's basic pay plus longevity for each drill. A selected reservist may complete and be paid for up to two drills per day. Hence, on a weekend of drills he may earn 4 days' pay. Reservists are paid at the same rate as active duty personnel of their grade and longevity when called to active duty, including their annual 2 weeks of active duty training.

Burright et al. (1982) suggest that net reserve pay may differ significantly from gross reserve pay. First, the reservist must pay his own expenses when traveling to and from training drills. Second, as discussed in the previous section, the civilian employer's policy toward reservists' leave will determine whether the member enjoys 2 weeks of reserve duty at an implicit wage rate that is higher, about the same, or substantially below his normal civilian wage.

In addition to basic pay, members of the Selected Reserves may receive retirement pay beginning at age 60 for nonregular military service. An individual must complete 20 years of "satisfactory Federal service" as a member of the armed forces. A year in which a member earns 50 retirement credit points constitutes a year of satisfactory service. One point is granted for each day of active duty or active duty training, and one point is earned for attendance at drills. Up to two points may be awarded for multiple drills attended in a day. Fifteen points are earned per year for simply being in the Reserves.

Retirement pay is computed in a manner similar to active duty retirement pay, except that effective years of service for the retirement pay purposes are calculated by dividing the total accumulated points by 360. For example, if the member accumulates the minimum of 50 points per year for 20 years, his effective years of service would be 2.8, and his monthly retirement pay would be about 7% of monthly basic pay.[5] The opportunity to vest active duty service provides an incentive for prior service personnel to affiliate and remain in the Selected Reserves.

Basic pay and retirement pay are the major elements of compensation for the Selected Reserve. However, a targeted reenlistment bonus program began in FY78. A bonus of $900 was offered to those who reenlist for an additional 3 years, while an $1,800 bonus was offered to those who reenlisted for 6 years. In FY79, an enlistment bonus program, offering nonprior service recruits up to $2,000, was started. This was followed in FY81 by an affiliation bonus for prior service recruits.

Reservists are also offered educational benefits, exchange and commissary privileges while on extended active duty, and health and life insurance benefits. Members who enlist, reenlist, or extend for 6 years beyond a current obligation in the Selected Reserves are offered educational benefits of $5,040 under the New GI Bill begun in 1985. Before 1985 recruits to the Selected Reserves were offered the choice between an enlistment bonus of up

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[5] For those who entered after the effective date of the 1981 DoD Authorization Act, the retirement pay would be 7% of an average of basic pay over the last 3 years of service.

to $2,000 or educational benefits of up to $4,000 for enlisting in certain shortage skills.

2.5 RELEVANCE OF INSTITUTIONAL FACTORS FOR RETENTION MODELS

Retention models must reflect the policy and institutional environment if they are to generate reliable estimates for decisionmakers. Regardless of a model's theoretical elegance, it will be of limited utility unless it captures the essence of the Army's personnel systems. Ways in which the institutional context will affect our model development and estimation are suggested by the following issues.

Demographic Factors. The models must capture differences in retention behavior that vary by personal characteristics, such as scores on the Armed Forces Qualification Test, education, and gender. Full-time reservists may require separate treatment from the regular (part-time) reservists and behavior of the Guard may differ from that of the Army Reserve. Reservists with prior active service may exhibit such different behavior from reservists with no prior service that separate models may be needed. The unique features of the Army manpower-personnel systems underlying these communities must be reflected in the model development and the model estimation.

Population at Risk. Retention models focus on individuals voluntary stay-leave decisions. Some studies, however, have estimated models with samples containing members who were not free to make a decision--either they were obligated to remain in the military or they were not permitted to stay--that bias the estimated model parameters.

Enlisted personnel sign contracts for specific lengths of service. In general, they do not have the option of leaving until they reach the expiration of the contract, at which point they make a retention decision.[6] A fraction of enlisted personnel reaching contract expiration, however, are deemed by the Army to be ineligible to reenlist. Hence, this portion should not be included in the analysis because they are not free to make a stay-leave decision.

Enlisted personnel in the Reserves also sign contracts, but they appear to be much less binding. This suggests a different formulation of the reserve retention equations--one that is not so dependent on time to contract expiration. Officers do not sign contracts, but many face service obligations due to educational assistance (especially academy graduates), military training, and promotion after the 20-year point. An officer retention model must be estimated only with a sample of individuals at risk to a stay-leave outcome.

Finally, another way to look at the issue of service obligations is to view the obligation as imposing a cost, but not an infinite cost, of making a voluntary leave decision while still under obligation. Hence, one might attempt to model retention behavior as an annual decision, but include variables that indicate time remaining to ETS (enlisted) or to the completion of obligated service (officers).

Active-Reserve Interaction. About 5% of those leaving the military in the first term of reserve service affiliate with a Guard or Reserve unit after separation. Because of the absolute numbers involved, these losses from the active component represent sizable gains to the reserve components. Moreover, from a total force perspective, these losses could be viewed as a transfer (a

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6 Some reenlist before reaching ETS, which raises additional problems about the timing and measurement of the dependent and independent variables.

form of retention). Alternatively, about 20% of reservists return to active status, and care must be exercised not to label them as losses.

3.0 RESERVE RETENTION LITERATURE REVIEW

This literature review examines the existing research on retention in the Army Selected Reserves. Our interest focuses upon the reenlistment decision in the Army Selected. However, because of the overall paucity of research in this area, we have expanded our review to include the other Services, and the enlistment decision as well.

Interest in the reserves has increased significantly in recent years, along with an increase in their relative importance to the nation's defense. Somewhat surprisingly, however, this has generated very little serious additional research in the factors affecting the supply of reservists. Below, the methods, data, and results of the available research on reserve supply behavior are reviewed and the implications for our research effort are discussed. Section 2 discusses the type of decisions examined; Section 3 briefly reviews the economic literature on the secondary labor market, or "moonlighting", which provides a framework for analyzing reserve supply; Section 4 examines the methods and data employed in empirical studies of reserve supply behavior; Section 5 discusses the results of these studies with emphasis on the implications for compensation studies; and Section 6 discusses the implications of the literature for further work in the area.

3.1 TYPE OF DECISION

The decision to enlist or reenlist in the Selected Reserves differs, in general, from a more typical occupational choice decision in that participation in the reserves is largely "part time". The decision to enlist in the reserves may serve as a low cost way to experience military life. During the initial period of active duty training, the member may decide whether he enjoys military life, and may choose to enter active duty permanently. More generally, however, the reserves offer a way to serve one's country while continuing to pursue civilian interests, to obtain additional income to supplement earnings from civilian employment, and to hedge against unemployment. For those with prior active duty service but less than a full career, reserve affiliation is a way to vest active duty service toward retirement that might otherwise be lost.

Though service in the reserves is part time, it does impose demands upon the member's time. Satisfactory participation typically means that the member "drills" one weekend a month, and also that he serves two continuous weeks on active duty for training purposes. The condition under which the employer grants the reservist the time necessary for participation is an important determinant of the net financial rewards of service in the Selected Reserves.

The decision to remain in the reserves is undoubtedly a function of a plethora of factors, including patriotism, a spirit of adventure, a desire to be with people of similar backgrounds and interests, and others. The economic framework for analyzing the decision to enlist or reenlist in the Selected Reserves is the theory of moonlighting or participation in the secondary labor market. This framework was developed most rigorously by Shishko and Rostker (1976), and was applied by them both to the decision to moonlight in the civilian sector and to the decision to participate in the Selected Reserves. This framework implicitly holds these intangible factors constant, and concentrates on the effect of financial incentives on reserve participation. This does not mean that these factors are unimportant or irrelevant. Rather, the focus is on a set of other incentives which can be used for policy purposes to affect the supply of reserves.

In the next section, the theory of moonlighting, as developed by Shishko and Rostker, is explored, and some evidence concerning the determinants of moonlighting behavior in the civilian sector is presented.

3.2 A MODEL OF MOONLIGHTING

Shishko and Rostker (1976) present a model of multiple job holding and estimate a supply curve of moonlighting hours. The individual whose indifference curves are represented in Figure 3.1 receives wage W_p at his primary job. Given this wage, the individual would like to work L^* hours, achieving utility U_2. However, constraints on hours worked at the primary job permit only L_0 hours and utility of U_0 as shown at point A. If the individual receives a wage offer in excess of his marginal rate of substitution at A, he will increase utility by accepting the

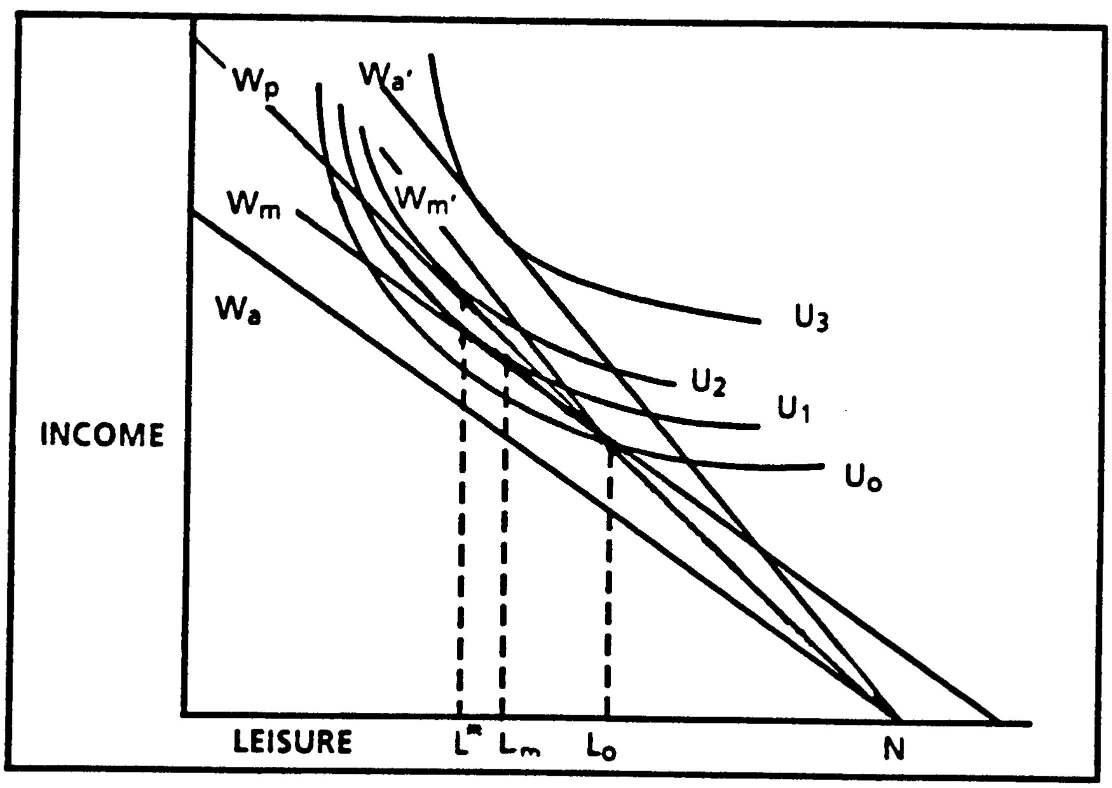

FIGURE 4.1. MOONLIGHTING MODEL

offer and working at a second job. Given a moonlighting wage W_m, he will choose to work $L_m - L_0$ additional hours, thus obtaining utility U_1.

This model of multiple job holding is important for understanding reserve behavior since over 93% of reservists hold primary jobs in the civilian sector. In particular, W_m is a significant policy variable for reserve participation. Unfortunately, theory is ambiguous concerning the effects of such determinants as W_m, W_0, and L_0. Worse still, there is little empirical evidence, and even less consensus. In addition to Shishko and Rostker's estimates, there are two studies which focus on the effect of taxes on moonlighting. O'Connell (1979), like Shishko and Rostker, uses tobit analysis. He adds a term to the model which is the product of wages and the marginal tax rate. Hunt, Hill, and Kiker (1985) use Heckman's tobit and enter the marginal tax rate additively. Although all three studies analyze data for men, O'Connell's sample is limited to men age 45 to 59, and Hunt et al. study only blue collar workers.

Theory states that the pure substitution effect of a change in the secondary wage rate is positive. An increase in the wage makes nonmarket time more costly, and more hours are worked, all other things equal. Shishko and Rostker expressly test this pure substitution effect and confirm the theory: a higher secondary wage results in more hours worked on the secondary job. In addition, Shishko and Rostker's combined substitution and income effect resulting from a wage change is positive. This combined effect is confirmed by O'Connell but rejected by Hunt et al. who estimate a backward bending moonlighting supply curve.

An increase in the primary wage will reduce moonlighting hours if leisure is a superior good. This result is confirmed by both Shishko and Rostker and O'Connell. However, Hunt, et al. estimate a significant positive coefficient. There is no explanation in theory for this result.

The theoretical effect of a change in L_0 depends in part on the relative magnitudes of W_m and W_0. Where W_m is less than W_0 and leisure is superior, an increase in L_0 means a decrease in L_m. Both Shishko and Rostker and O'Connell find negative effects for L_0; Hunt et al. do not include the variable in their model.

An increase in nonlabor income will reduce moonlighting hours if, as expected, individuals use their increased income to choose more leisure. Hunt et al. estimate the effect of nonlabor income on hours through its effect on the reservation wage. The positive effect of nonlabor income on the reservation wage is translated to an implausible positive effect on moonlighting hours. Nonlabor income in other studies is insignificant.

All three studies agree that moonlighters are characterized by larger families. The larger families no doubt encourage more specialization, with wives specializing in household and husbands in market production. In addition, Shishko and Rostker find moonlighters to be younger than nonmoonlighters, and Hunt et al. find them to have higher mortgage payments. Working wives decrease moonlighting hours (we will examine the reasons for this in Section 4).

Figure 3.1 can be expanded to include the possibility that the moonlighter switches his secondary job for his primary job. This exchange is analogous to the reservist's returning to active duty. An increase in military pay will swivel upward W_a around N to W_a' and W_m around point A to W_m'. If W_a' exceeds both W_p and opportunities for continued moonlighting, the reservist may return to active duty as shown at C on the graph.

3.3 METHODOLOGY

This section examines the methodology used in the literature. It is divided into the following sections: 3.3.1 examines the data collection techniques, 3.3.2 explores the decision models, and 3.3.3 discusses the estimation approaches.

3.3.1 Data Sources

There are only a few sources of data for the reserve forces. This problem is compounded by the fact that the military does not keep very complete records on the reserves. This complicates research. Hence the literature elected to study groups of servicemen with more complete records.

Quester's (1983) study of prior service enlistees drew its data from a file used in a previous study at the Center for Naval Analysis. The file contained data on Navy personnel whose service obligations expired during fiscal year 1977-1980. Thus demographic data could be drawn from the active Navy files. From these observations, Quester extracted those persons who had less than 77 months of service, were eligible to reenlist but chose not to, and were paygrade E-5 or below. This extract was then matched with the fiscal year 1976-1981 SELRES (Navy Reserve) file. The result was a substantial sample population of 58,035.

Grissmer, Doering, and Sachar's (1982) evaluation of the 1978 SR Reenlistment Bonus Test used an extensive data base derived from four sources: the Initial Eligibility Rosters, the Reserve Personnel Master Files, Monthly Status Reports, and survey questionnaires. The participants were drawn from the Army Reserve and the Army National Guard. They were all non-prior servicemen with less than eight years of service and whose term of service expired between January 1 and December 31, 1978. The sample population was 15,315.

Other studies drew their data from this same data base. The 1983 follow-up study used the test data as well as longitudinal data from 1979 to 1981. Grissmer and Kirby (1984) used the NG survey data and Burright, Grissmer and Doering (1982) used the test's Master Files for the National Guard. These two studies concentrated on the National Guard data because of response bias in the Army Reserve data[1].

There are obvious data collection problems for the Reserves. Quester's study appears to have a reasonable sample population. And while the 1978 SR Reenlistment Bonus Test tapped many data sources, the Army Reserve data were found to be biased. Burright et al. (1982) and Grissmer et al. (1984) solved this problem by discarding the Army Reserve data. Their study of NG behavior is based on a sound data base. In general, a scarcity of data resources has contributed to the Reserve research problem.

3.3.2 Models

There is very little variation in the type of reserve enlistment/retention model specified. Since the dependant variable is whether to enlist or reenlist, the model estimates the probability that an individual will enlist or reenlist given a particular level of compensation. Hence the model will

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[1]The sample was approximately 75% National Guardsmen. This result occurred because Congress allocated $2 million to the Army Reserve study versus $3 million for the Guard study. Also, the Army Reserve has a higher retention rate than the Guard so that fewer Army reservists could participate even if the budgets were equal. For further explanations of this sample bias see Burright et al. (1982).

estimate a probability value between 0 and 1. Two transformations which constrain the estimated probability to lie within the unit interval are the logit and probit models. Almost all the studies used the logit model.

Burright et al. use net reserve pay, net required days of reserve service, demographic characteristics, and the civilian work environment as explanatory variables. This last category of variables, the civilian work environment, includes the civilian hourly wage, the availability of overtime, employer attitudes towards reserve participation and whether the reservist must use vacation time for drills. These variables are important to the reserve model as the decision to participate in the Reserves resembles the moonlighting decision. In the 1978 reenlistment bonus test, more than 93% of the reservists were moonlighting[2]. Thus the civilian work environment may potentially play an important role in the reserve enlistment or reenlistment decision. Grissmer et al. (1984), which relies on the same model, is the only other study which examines these variables.

Grissmer's analysis and follow-up of the SR Reenlistment Bonus Test also employs a logit model. He examined the reenlistment decision, the term of commitment, presence in the reserve after the test ended, demographics, military experience and regional characteristics as variables.

The only exception to the logit model is Quester's (1983) model of the enlistment decision. She used a probit model with the civilian unemployment rate, real military pay, skill rating, mental group, age, and universal military training obligation as variables.

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[2] See Burright et al. (1982).

3.3.3 Estimation Approaches

As with the models, there was little variance. Maximum likelihood estimation was the favored approach. Quester used both probit and ordinary least squares, and found little variance between the two.

3.4 RESULTS

The responsiveness of reserves to pay and bonuses is probably the single most interesting result from these studies for policy purposes. Grissmer et al.'s analysis of the 1978 SR Reenlistment Bonus Test data revealed that a $900 bonus for 3 years and a $1800 bonus for 6 years increased the reenlistment rate from 38.4% to 40.6%. Also, the bonus increased the average length of reenlistment term from 1.31 to 4.37 years and, after 2 years, 37.3% versus 30.4% of the reenlistees were still honoring their reenlistment obligations. The follow-up study (1983) estimated that over 7 years, 490 man-years would be gained for every group of 1000 reservists offered the reenlistment bonus.

Some authors differentiate between net pay elasticities and gross pay elasticities, where the former includes the mean lost income from the civilian job as a result of reserve participation. Grissmer et al. (1984) found a net pay elasticity of .2 for the Army National Guard. Burright et al. estimated a net pay elasticity of .12 and a gross pay elasticity of .18 for the National Guard. Quester finds pay elasticities ranging from .6 to 2.5, depending on the occupation of the Navy reservist and the unemployment rate. Overall, the findings indicate that pay has only a slight effect on reserve retention. Quester's results suggest a larger effect on enlistment. The elasticities are smaller than the moonlighting elasticity measured for civilian moonlighters. This might be expected since the net annual after-tax reserve income accounts for only since the net annual after-tax reserve income accounts for only 7% of the typical reservist's income[3].

Burright et al. also found that net reserve time, civilian wages, and hours worked in a civilian job have only slight effects on reserve retention. Respectively, the elasticities are -.01, -.21. and -.26. As for the other civilian work environment variables, there are few concrete results. The employer's attitude towards reserve duty was reported by the reservist and hence is not too accurate. When reservists have to use their own vacation time to attend summer camp, the proportional change in the reenlistment rate is -0.07. However, only 9% of the respondents indicated that they were in this situation and the aforementioned result is not statistically significant.

3.5 CONCLUSION

There have been few studies of the relationship between reserve compensation and reserve enlistments and reenlistments. The previous research offers little insight as to the best methods to use in any future work, at least, compared to the voluminous research available for active duty personnel. Much of the literature reviewed here was generated from the 1978 Selected Reserve Reenlistment Bonus Test. Several researchers, including Burright and Grissmer, have noted that the Army Reserve data is not very good. Hence the conclusions based on this data are somewhat questionable.

Ideally, from a policy maker's point of view, a Reserve compensation study would also address the indirect issues concerning compensation. Since Reserve duty is widely viewed as

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[3] See Burright et al.(1982).

a second job, the compensation issue includes more than just drill pay. The employer's policies concerning reserve participation play an important role. If the reservist is not fully compensated by his employer during reserve training or if he is forced to use his paid vacation time for drills, reserve compensation will be worth less than face value. If the reservist believes that his employer views reserve participation negatively, he may elect not to participate in the reserves for fear that he may lose his primary job. Hence there is more to the compensation issue than meets the eye. Burright et al. (1982) tried to capture the civilian pay issue by differentiating between net and gross compensation. They also attempted to measure the effect of using paid vacation time for drills and employers attitudes. Unfortunately, the former was not statistically significant and the latter was a subjective measure. Future research efforts must address these issues.

In conclusion, the previous literature offers little specific advice for any future projects, other than an admonition that solid data may be difficult to obtain. On the positive side, this brief review indicates that there is certainly a fertile field for additional research.

4.0 APPROACH

4.1 ECONOMIC FRAMEWORK

Our approach is to build a model of reserve reenlistment behavior based upon a sound economic theory of labor force behavior. This does not mean that economic motives are the sole reasons for participating in the reserves. Patriotism, a desire to associate with people that share one's interests, and a plethora of other factors undoubtedly influence this decision. These factors and motivations will be included in the analysis where feasible, and are implicit in the socio-demographic variables that will be included in the retention equations.

Since reserve participation is part time, and is similar in some respects to an avocation, factors that are less directly of an economic nature are probably more important for explaining reserve retention behavior than they are for the active components.[1] However, the extensive literature concerned with retention behavior in the active force suggests that a framework based upon economic theory is quite helpful for understanding and explaining variation in retention behavior both cross-sectionally and over time. Moreover, such a framework is particularly useful for focusing upon key policy variables that can be expected to affect reserve retention behavior, such as relative pay and bonuses.

In contrast to the voluminous literature on active duty retention behavior, very little research attention has been devoted to the retention behavior of the Selected Reserve. The only rigorous theoretical framework that has been applied to the reserve affiliation or retention decision is the moonlighting

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[1] Indeed, the conventional wisdom is that reserve behavior is relatively unresponsive to purely economic variables.

model of Rostker and Shishko (1976), reviewed briefly in Section 3.

In our approach to reserve reenlistment, we build and expand upon the "moonlighting" model of reserve reenlistment behavior in several ways. First, we point out some problems in the direct application of the moonlighting model to the reserve participation decision that have been ignored in previous research. Second, we incorporate the economics of family labor supply, and theory of the allocation of time within a household, into the moonlighting model. This "household" utility maximization hypothesis improves upon the simple Rostker-Shishko model in that hypotheses concerning the effect of spouse's labor market behavior on the decision to reenlist in the reserves are derived. Moreover, it provides a theoretical foundation for including the richer data on reserve spouse labor market behavior that is included in the 1986 Reserve Component Survey. Third, we expand the model from a dichotomous decision (reenlist or leave the reserves) to a trichotomous decision (reenlist, leave, or enter active duty). Finally, we briefly explore an alternative economic rationale for motivating reserve participation based upon risk-aversion.

Though the Rostker-Shishko model is the direct precursor of our approach, it has its foundation in the theory of the allocation of time and the household production function, as developed by Becker (1965), and the family or household utility maximization hypothesis, as in Mincer (1962). The key insight is that non- market time or "leisure" has value to the family in "home production" -- productive activity that takes place outside the labor market. The obvious example of this is childcare. Moreover, the division of labor within the household will be rational, based upon comparative advantages of each member of the family in market and non-market productive activities. This foundation should offer valuable insights in understanding and explaining participation in the reserves.

4.2 THE MOONLIGHTING MODEL

The Rostker-Shishko model postulates a utility maximizing individual who accepts a second job or "moonlighting" opportunity because of a constraint on the number of hours he may work for pay at his primary job. That is, at the hourly wage of his primary job, he would like to work more but is not offered that opportunity (at his current wage) by his primary employer.

In the simple set-up of the Rostker-Shishko model, the individual allocates his time to his primary job, leisure or home-production time, and a secondary job, to maximize a utility function with leisure or non-market time and goods and services produced in the marketplace as arguments. That is, his problem is to:

$$\begin{aligned} &\text{maximize} && U(L,X) && (4.1)\\ &\text{subject to:} && X=W_pT_p+W_sT_s+Y_n \\ &\text{and} && T=T_p+T_s+L \end{aligned}$$

where

L is leisure or non- market time;

X is a composite market good, defined so that the price is unity.

W_p and W_s are the hourly wage rates in the primary and secondary job, respectively;

T_p and T_s is time spent in the primary and secondary job,respectively;

Y_n is non-labor income;

Y is pecuniary income defined as $W_pT_p+W_s(T-T_p-L)+Y_n$. Note that Y=X.

In addition, the constraint that $T_p = T_p^*$ (hours of work in the primary job are fixed at T_p^*) is imposed to motivate the model. In the Rostker-Shishko model, there must be a limit on the hours that the individual may work at either the primary job or the secondary job. Otherwise, the individual would allocate all his labor market time to the job with the higher wage. We will briefly explore an alternative motivation for moonlighting behavior based upon risk aversion in section 4.7

From the indirect utility function, $V(W_s, Y)$, we obtain the moonlighting labor supply function:

$$T_s = T - T_p^* + (dV/dW_s)/(dV/dY) \tag{4.2}$$

Solving for the first order conditions of (4.1), and totally differentiating to obtain the properties of this function, we can obtain the following propositions:

(a) Similar to standard labor supply theory, an increase in moonlighting wage will have an ambiguous effect on the supply of hours allocated to moonlighting, as long as leisure is a normal good. The effect is most likely to be positive, however.

(b) An increase in the wage offered by the primary job, W_p, will reduce the quantity of hours supplied to the secondary job, as long as leisure (non- market time) is a normal good.

(c) An increase in non-labor income, Y_n, will reduce hours supplied to the moonlighting job, as long as leisure is a normal good.

(d) An increase in required hours in the primary job, T_p^*, will reduce hours supplied to the moonlighting job if leisure is a normal good and if the primary wage is greater than the moonlighting wage.

4.3 A SIMPLE MODEL OF RESERVE REENLISTMENT

Our problem, of course, is not to predict the number of hours an individual will spend moonlighting in the abstract, but to predict the probability that an individual part-time soldier will choose to reenlist in the Army Reserves. In this section, we derive a simple economic model of reserve reenlistment behavior. In the subsequent section, we discuss the limitations of this model and, in particular, the failure to capture the institutional aspects of the reserve reenlistment decision.

Suppose that we could assume that the member was going to work hours in addition to those of his primary job, either in the civilian sector or by remaining in the Selected Reserves. Suppose, further, that we assume that the individual can choose his additional hours of work in either sector, given the secondary wage offer in either state.

Then, consider the indirect utility function in which we have substituted the quantity of leisure and goods demanded, given income and the price of leisure, that maximize utility. The utility from state A, in which the member reenlists, and state B, in which the member leaves the reserves and accepts a second job in the civilian sector, are given by:

$$\text{State A (reenlist):} \quad U\{L(W^{A}{}_{S},Y^{A}),X(W^{A}{}_{S},Y^{A})\}$$

$$\text{State B (leave):} \quad U\{L(W^{B}{}_{S},Y^{B}),X(W^{B}{}_{S},Y^{B})\}$$

Substituting the constraint that X=Y, the reserve member will reenlist if:

$$U\{L(W^{A}{}_{S},Y^{A}),Y^{A}\} > U\{L(W^{B}{}_{S},Y^{B}),Y^{B}\} \tag{4.3}$$

Now, differentiate U(...) with respect to W_s, the secondary wage and we can approximate $U^A - U^B$ as[2]:

$$U^A - U^B = \sim \{U_L(dL/dW_s) + U_L(dL/dY)(T-L-T_p^*) + U_Y[T-L-T_p^*) - (dL/dW_s)]\}DW_s$$

Divide through by U_Y, the marginal utility of income, and we have an approximation to the dollar amount of the welfare increase or decrease from reenlisting in the reserves rather than leaving to accept a civilian moonlighting job.[3]

$$(U^A - U^B)/U_Y = \sim \{[T-L-T_p^* - dL/dWs] + (U_L/U_Y)[(dL/dY)(T-L-T_p^*) + dL/dW_s]]\} \times (W^A{}_s - W^B{}_s) = DR \qquad (4.4)$$

In words, the first bracketed expression is an approximation to the dollar value of the difference in income that results from reenlisting at wage $W^A{}_s$ rather than accepting a moonlighting job in the civilian sector, while the second bracketed expression is an approximation of the dollar equivalent value of the difference in leisure, or home production time, associated with the choice. This is simply the difference in "rent" from reenlisting rather than leaving, under the restrictive assumptions we have made. Call this measure "DR".[4]

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[2] We denote partial derivatives as "d" and total derivatives as "D".

[3] This measure is an approximation of the Marshallian consumer surplus, or net rent, from a change in the secondary labor market wage. We substitute $(W^A{}_s - W^B{}_s)$ for DW_s.

[4] "DR" means the change in rents. Note that this is conceptually similar to a one-period version of the Annualized Cost of Leaving measure in the ACOL model that has been employed successfully in the analysis of active duty retention behavior. To see this, assume that moonlighting hours remain fixed; that is dL=0. The, DR reduces to $(T-T_p^*-L)(W^A{}_s - W^B{}_s)$ -- the one-period ACOL. For further discussion of the ACOL model, its problems and some cures, see Matthew Black, Paul F. Hogan, and Steve Sylwester, "A Dynamic Model of Navy Retention Behavior", SRA Corporation, 1987.

Now, assume that there are non-pecuniary differences between A and B, and they enter the utility function additively. These differences interact with an individual's tastes and with other unobservable random components to produce a dollar-equivalent value of the net difference in state A and B due to nonpecuniary factors. This difference, e_i, is not observable to the researcher, but is distributed according to $f(e_i)$, with cumulative distribution $F(e)$, among potential reservists at the reenlistment point.[5] It is assumed to have a mean of zero and finite variance. The criterion for reenlistment for individual i becomes, reenlist if:

$$DR_i + e_i > 0 \tag{4.5}$$

The probability that an individual reenlists, then, is the probability that e_i exceeds the value of the index DR_i, or

$$Pr(e_i > -DR_i) = 1 - F(-DR_i) \tag{4.6}$$

If F(...) can be approximated by a cumulative normal or logistic distribution, this relationship can be estimated as a Probit or Logit model, respectively. We can, in fact, obtain a measure of DR by estimating a moonlighting supply curve, similar to Rostker-Shishko. This can then be integrated to obtain our proximate measure of the change in rents, DR.

This model, readily derived from economic theory, is similar to the active duty models. Typically, in the active duty reenlistment models, such as ACOL, it is assumed that leisure, L, is fixed at a constant amount, independent of the decision to

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[5] In fact, we can include demographic and other characteristics of the individual that are correlated with differences in tastes, and, perhaps, measures of the non-pecuniary differences in the conditions of service in the reserves. Inclusion of these measurable factors will, presumably, reduce the variance in e.

reenlist. This is probably a satisfactory assumption in the active duty model. Onerously long hours, deployments and sea duty can be captured empirically in such models by inclusion of variables representing time spent at sea or deployment.

This simple model, however, is not likely to capture the relevant details of the reserve reenlistment decision.

4.4 COMPLICATIONS IN THE APPLICATION TO RESERVE REENLISTMENT

There are two interrelated issues: (1) will the individual continue to participate in the secondary (moonlighting) labor market and (2) if so, will it continue to be with the Army Selected Reserves.

The problem is complicated by the nature of the Reserves. The member must accept the combination of the reserve wage and hours of work as an all-or-none package, and is not free, typically, to adjust his hours of work in order to achieve an optimal level of utility given his wage.

(1) The individual reservist cannot, in fact, choose his hours of participation in the reserves, given his reserve wage rate. He must, instead, accept the reserve wage and required drills as a package. Because of this institutional constraint, we cannot assume a nice tangency between the marginal value of time and the Reserve wage rate, as suggested by the first order conditions. The analysis using the indirect utility function is vitiated because the reserve is not necessarily "on" his supply curve, or demand for leisure curve.

(2) It is not necessarily the case that the member will leave the reserves in order to accept a preferred secondary job offer in the civilian sector. He may, for example, choose not to moonlight. Hence, we must consider withdrawal from the secondary labor market as an alternative in the analysis.

We can adapt the decision framework in light of (1) and (2) as follows. We evaluate two alternative civilian states, B and B'. The first is the case we considered previously in which the reserve member leaves and accepts a moonlighting job in the civilian sector. In the second, the member also leaves, but withdraws from the secondary labor market. His value of leisure is $L^{B'}$, presumably greater than L^B, and moonlighting income no longer appears as part of income.[6]

In this setup the criterion is, reenlist if:

$$U\{L^A, W^A{}_s(T-L^A-T_p{}^*)+W_pT_p{}^*+Y_n)\} >$$

$$\max \{U(L^B, W^B{}_s(T-L^B-T_p{}^*)+W_pT_p{}^*+Y_n), U(L^{B'}, W_pT_p{}^*+Y_n) \qquad (4.7)$$

That is, the member will reenlist if the value to him of reenlisting is greater than either the value of leaving and accepting a civilian moonlighting position or the value of simply leaving the reserves and withdrawing from the secondary labor market entirely. We can no longer assume that the member will be "on" his supply curve for part time work. When participating in the reserves, he accepts a package of hours of work and wage. Further, should he enter the civilian sector, he may choose a "corner solution" of no hours of part time work. For these

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[6] We can motivate the withdrawal from the secondary labor market in two ways. First, the member may have received a pay raise in his primary job. Recall that one of the results of the Rostker-Shishko model is that, if leisure is a normal good, an individual will reduce moonlighting hours of work, and perhaps withdraw from the moonlighting market, the higher is his primary job's wage. Second, there may have been changes in the conditions of work in his primary job requiring, perhaps, longer hours of work. Assuming he keeps his primary job, the marginal value of leisure, or home production, time increases, reducing desired moonlighting hours, perhaps inducing withdrawal from the secondary labor market. Other factors that increase the individual's marginal value of time, unrelated to the labor market, may result in the behavior.

reasons, we must, at least implicitly, attempt to evaluate the value of reenlisting from a less convenient framework.

This setup suggests a random utility model with three choices. A multinomial conditional logit model, with the choice of reenlisting, leaving to moonlight in the civilian sector, and leaving but withdrawing from the secondary labor market entirely, would be one possible specification.[7] However, in the data sets available, we will observe only if the member leaves the reserves. We will not know if he moonlights in the civilian sector.[8] This suggests a reduced form specification:

Prob (Reenlist) =

$$\text{Prob}\{a_o + a_1[T_p{}^*W_p+Y_n] + a_2W^B{}_s + a_3\ W^A{}_sT^A{}_s + XB + e>0\} \qquad (4.8)$$

where XB is a vector of individual characteristics, such as marital status, number of children, etc. and associated coefficients.

(1) We expect $a_1<0$ because leisure is assumed to be a normal good. The marginal value of leisure will increase with an increase in non-moonlighting income, reducing the probability that the member will moonlight in general, and reenlist in the reserves in particular.

(2) We expect $a_2<0$, of course, because $W^B{}_s$ is the opportunity cost of reserve service rather than private sector moonlighting.

(3) Finally, $a_3>0$ requires no explanation.

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[7] It may be the case that entering the civilian sector to moonlight and withdrawing from the secondary labor market altogether are very close substitutes. If this were the case, a logit model would be inappropriate in that it assumes that relative odds of any two choices are independent of the characteristics of a third choice.

[8] We will, however, be able to discern if the member entered active duty. More on this in section 4.6.

We assume that the individual has made the optimal decisions, conditional upon being in either state A or B. As mentioned previously, this means for case A that the member accepts a combination of hours of work and wage, rather than adjusting optimally given the wage. Note that, in this formulation, we implicitly hold the member's full-time job constant between the two states. This, however, does not mean that it does not affect his retention decision. If leisure is a normal good, we would expect that, other things being equal, the higher the member's wage in his full-time job, the higher is his marginal value of time and the less likely he is to continue part time work.

The equation (4.8) can be estimated as either a probit or logit, depending upon the assumptions made concerning the error, e. We are estimating the conditional probability of leaving, the "hazard rate", and will include age and years of service variables to control for the censoring that has occurred up to that point. Our data set will consist of only a cross-section of observations on civilian earnings, family size, and so forth, that are available from the DoD Reserve Components Survey. We will then determine if the member reenlisted by searching through subsequent records, up to 18 months beyond the time of the DoD Survey. If these variables are largely unchanged between the time the member decided to enter the reserves and the time they are measured in the survey, one would expect that they would have less explanatory power than if there were changes. We can assume, however, that in our cross-sectional measurement of these variables, those members with above average civilian earnings experienced a larger increase than those with below average earnings. Hence, we can interpret the effect of cross-sectional differences between members in these variables as consisting both of cross-sectional level differences, and as relative increases and decreases in these variables experienced by the individual member.

4.5 INCORPORATING FAMILY OR HOUSEHOLD LABOR SUPPLY

The moonlighting model is motivated by assuming that the individual faces a constraint on the hours he may work on his primary job. At this constraint, the individual's marginal value of leisure (or home production) time is not only less than the wage rate at his primary job. It is also less than the wage in his best secondary employment opportunity. Hence, the individual chooses to moonlight.

Now, consider the same argument in the household or family context consisting of two adult members. The family's problem is to:

$$\max U(L_m, L_f, X) \tag{4.9}$$

subject to:

$$X = W_{mp}T_p + W_{ms}T_s + W_f T_{fw} + Y_n$$

$$T_m = T_p + T_s + L_m$$

$$T_f = T_{fw} + L_f$$

$$T_p = T_p^*$$

where:

L_m is the leisure or home production time of the spouse that is a reserve member;

L_f is the home production time of the non-member spouse;

X is a composite of the goods and services that can be purchased in the market, as before;

T_m and T_f are the total amounts of time available to the member and non-member spouses, respectively;

T_p and T_s is time spent in the primary and secondary job for the member spouse, while T_{fw} is time spent working the labor market for the non-member spouse;

W_{mp}, W_{ms} and W_f are the wage rates of the member spouse in his primary and secondary job and the wage rate of the non-member spouse, respectively.

We assume that the spouses are, at the margin, substitutes in home production, but not perfect substitutes. That means that if one spouse increases his allocation of time to the marketplace, the marginal value of leisure or home production time of the other spouse increases.

The first order conditions imply:[9]

$$(U_{Lm}/W_{ms}) = (U_{Lf}/W_f) \qquad (4.10)$$

From these first order conditions, and the innocuous assumption that the member and non-member spouse are substitutes in home production at the margin, it is clear that an increase in the wage rate of the non-member spouse will induce a decrease in desired moonlighting hours of the member. It will do this for two reasons. First, the higher wage rate of the non-member spouse will increase her hours of market work, raising the marginal value of home production (or leisure) time of the member, inducing him to reduce moonlighting hours. Second, leisure is assumed to be a normal good. The higher income will increase the demand for leisure of the family as a whole.[10]

Consider a hypothetical example of the implications of the household approach, as it applies to the reserve reenlistment decision. Assume the member's spouse has just completed degree requirements at the time the member must decide whether to

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[9] U_n denotes the partial derivative of U(...) with respect to n.

[10] There is the possibility that both the member and non-member spouse will reduce hours of market work. Though this would negate the first source of a reduction in the member's market time, it will still result in a reduction in moonlighting hours through the income effect. If the member and non-member spouse's time were extremely strong complements in home production, it is possible that the member's desired labor market time would increase upon an increase in the wage of the non-member spouse, but this is unlikely.

reenlist in the reserves. Presumably, this would mean a large increase in the non-member spouse's market wage. The non-member spouse would increase hours devoted to labor market, and, presumably, reduce hours devoted to home production activities. This raises the marginal value of time spent in home production activities of the member. Without a significant increase in the reserve wage, he will choose to leave the reserves and withdraw from the secondary labor market and increase the time spent in home production activities.

Revising our reduced form from the previous section to incorporate the effect of spouse labor market behavior on reserve reenlistment, we have:

$$\text{Prob (Reenlist)} = \text{Prob}\{a_o + a_1[T_p{}^*W_p + W_f T_{fw} + Y_n] + a_2 W^B{}_s + a_3\, W^A{}_s T^A{}_s + a_4 W_f + XB + e > 0\} \qquad (4.11)$$

As suggested above, we expect that $a_4 < 0$. Note that focus upon the family and home productivity as well as market productivity will allow us to interpret the effects of the presence of children, especially young child, in a more coherent fashion.

4.6 ACTIVE DUTY AS AN ALTERNATIVE TO RESERVE PARTICIPATION

The reserves and the active forces are naturally connected in a number of ways. A potentially important institutional relationship for reserve retention research is pay. Reserves and active duty personnel share the same pay table. When reserve pay rises relative to pay available from civilian moonlighting opportunities, active duty pay typically increases relative to civilian wage opportunities. Hence, though an increase in reserve pay may increase the incentive to reenlist in the reserves, it may also increase the incentive to enter full time active duty service.

A relevant alternative to service in the Army Reserves is entering active duty service on a full time status.[11] Failure to consider the active duty alternative, if in fact it is a relative alternative for Army reservists, will lead to biased, or misleading estimates of the responsiveness of reservists to pay changes. Indeed, the "conventional wisdom" that reservists are unresponsive to pay changes may, in part, reflect the failure to consider the active component alternative.

Figure 4.1 is a graphical exposition of how the Rostker-Shishko moonlighting model may be affected by inclusion of the active duty alternative.

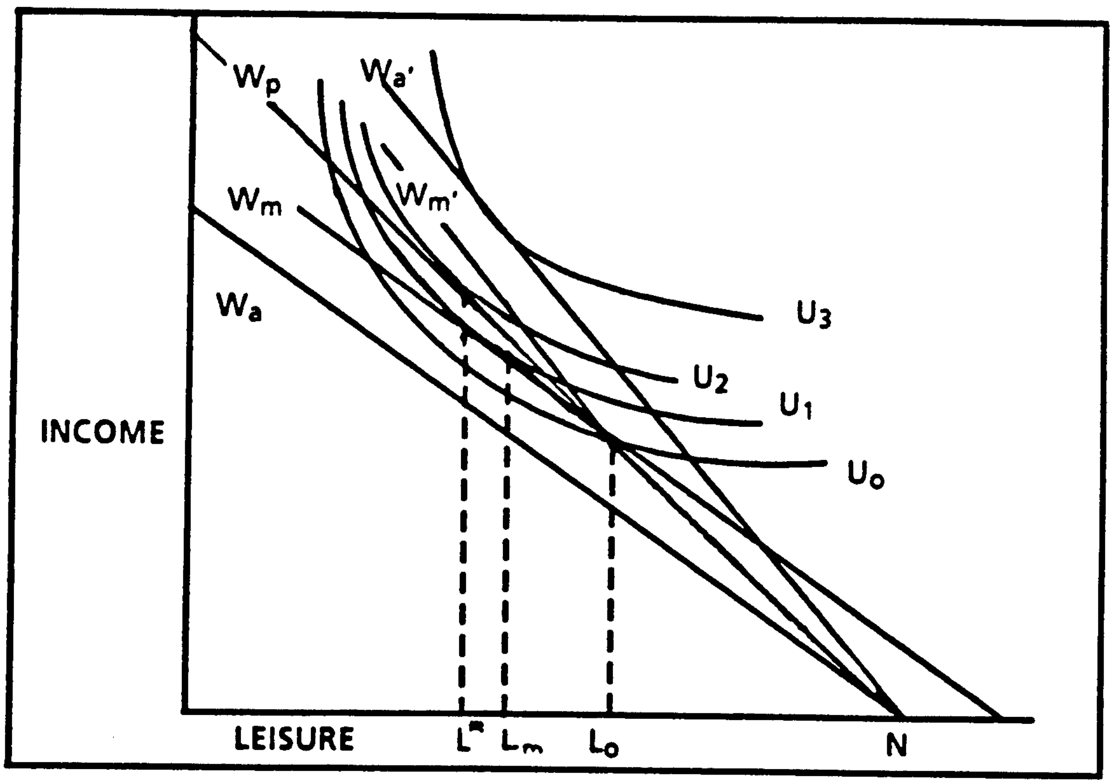

FIGURE 4.1. MOONLIGHTING MODEL

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[11] It has been estimated that as many as 20% of those leaving the Army Selected Reserves in the first term of service enter active duty. See Grissmer and Kirby (1985).

In the stylized diagram, W_p is the wage in the primary job, W_m is the wage in the Selected reserves, and Wa is the wage in the active force. Wa is parallel to Wm, reflecting the relationship between the active and reserve pay table. The individual works up to his fixed hours in his primary job, and then L_m-L_o hours as a reservist. Now, assume that the reserve and active duty wage rates increase, while the wage in the primary civilian job remains constant. While the individual is better off at the higher reserve wage, he is better off still by returning to active duty.

In our empirical work, we will expand the choice set to include three alternatives:

(1) Continue to participate in the reserves.

(2) Leave the reserves for the civilian sector, either accepting a civilian moonlighting position or withdrawing from the secondary labor market.

(3) Enter active duty.

The trichotomous model could be estimated as as multinomial logit or probit model.[12]

How relevant is the active duty choice for reenlistment behavior in the Army reserve? This is an empirical question and one of the topics for our research. The Defense Manpower Data Center will attempt to determine if those sample in the 1986 Reserve Component survey who subsequently left the reserves did return to active duty. It is clearly an important issue, both for understanding the reenlistment behavior of the reserves, and for understanding the relationship between the reserve and active

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12 In a logit specification, it is necessary to assume that the errors are independent, the "independence of irrelevant alternatives" assumption, that may be a poor assumption in this instance.

component compensation system, and the implications of changes in either.

4.7 MULTIPLE JOB HOLDING AS BEHAVIOR TOWARD RISK

As we have noted frequently, the motivation for holding multiple jobs in the Rostker-Shishko model is a constraint on the hours of work in the primary job. This is somewhat unsatisfying in that Rostker and Shishko never provide an economic rationale for this constraint. Hence, the theory may appear to be based upon an arbitrary assumption. While one avenue of research is to provide an economic rationale for the constraint on hours of work in the primary job,[13] we instead explore an alternative motivation for multiple job holding based upon risk-aversion. Moreover, this rationale for multiple job holding may provide some new insights into factors affecting reserve participation.

An individual is said to be risk averse if he would prefer a given income with certainty rather than an uncertain income that has the same expected value. Diminishing marginal utility of income is implied by risk aversion. That is, $U_{YY}<0$. We assume that risk averse individuals choose to allocate their time among competing pursuits, including possibly, multiple jobs, to maximize expected utility, or:

$$\max E[U(X,Y)] \tag{4.13}$$

Assume that the individual may choose from among a number of alternative jobs, and that he may allocate a number of his working hours, T_j, to each job, which offers wage w_j. Further, assume

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[13] A number of possibilities come to mind. For example, the production process may require complementary resources. Hence, a customary requirement for a fixed number of hours at specified times may economize on the costs of coordinating the efforts of the complementary resources.

that these jobs are risky, and that the probability that individual is able to work the number of hours he planned is p_j. Further, assume that the probabilities are not perfectly correlated. Under these conditions, it can be demonstrated that the individual may choose to hold more than one job. In essence, he diversifies the risk of his "human capital" portfolio by choosing to hold more than one job.

Risk diversification provides an explanation for multiple job holding that does not rely on arbitrary constraints on hours worked. The individual may be better off by reducing hours in job 1 and accepting some hours in job 2 even though the wage in 1 is greater than in 2, $w_1 > w_2$. The possibility of multiple job holding as behavior toward risk follows from the assumption of a non-zero probability of a layoff, and diminishing marginal utility of income.[14]

The risk aversion model of moonlighting suggests additional propositions concerning reserve participation. These, largely, do not contradict the implications of the Rostker-Shishko model and may be considered complementary. The following propositions and insights appear to follow from the simple risk-aversion model:[15]

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[14] A numerical example illustrates the argument. Let the individual's utility function in income be of the form:

$$U = Y - .00008\ Y^2$$

For simplicity, we ignore the value of leisure, and assume that the individual's problem is to allocate 1000 hours of work between two jobs. Job 1 offers a wage of \$5 per hour and has a probability of unemployment of .1, while job 2 offers only \$4.9 per hour and has a probability of unemployment that is independent of job 1, but is also .1.

Under certainty, the individual would obviously allocate 1000 hours to job 1 and no hours to job 2. However, with the specified probabilities of unemployment, his expected utility is maximized by allocating about 560 hours to job 1 and 440 hours to job 2.

[15] We use "appear" advisedly in that we have not worked out the mathematical details of the risk-aversion model.

(1) Other things equal, the individual is more likely to moonlight and therefore reenlist in the reserves the higher is the risk of layoff in his primary job.

(2) Since the probability of involuntary separation in the Selected Reserves is largely uncorrelated with unemployment in the civilian economy, we would expect a higher probability of reenlistment in the reserves during periods of high general unemployment, and we would expect higher reenlistment probabilities in sectors of the country that have greater cyclical unemployment risk in the civilian economy.

(3) Again, other things being equal, the member is less likely to moonlight and therefore reenlist in the reserves, the greater are the number of other independent sources of family income.

(4) To the extent that participation in the reserves lowers the cost to the individual of returning to active duty service, an increase in the general or sectorial level of unemployment may increase the probability that the individual leaves the reserves and enters active duty. Proposition (2) must be modified if this is the case.

We will refine these general propositions and test them within the overall context of our reserve reenlistment model. Propositions (1) and (2) can be analyzed within the context of the reduced form reenlistment model presented in section 4.4. Tests of (3) can readily be incorporated into the structure of the household retention model discussed in section 4.5, while proposition (4) is easily testable within the framework suggested in section 4.6.

4.8 MODEL ESTIMATION

The models we have discussed are based upon individual microdata with a dichotomous outcome variable of zero or one depending upon whether the individual reenlists. The estimated reenlistment models are probability models, predicting the probability that, given individual characteristics, financial incentives, general economic conditions, the member will reenlist.

The models, therefore, will be estimated as Probit or Logit models.

Probit and logit models have the desired property that, unlike linear probability models, they constrain the predicted probability of reenlistment to lie within the unit interval. Moreover, they produce efficient estimates, with unbiased measures of the standard error. This is not the case for the linear model.

A multinomial logit or probit is useful if there is more than one alternative to reenlisting from which the reservist may choose. For example, we intend to analyze the case where the reservist may enter active duty service, as well as leave for purely civilian pursuits.

For the the case where there are only two options, the choice between the probit and logit formulation is largely inconsequential. It entails assumptions concerning the distribution of the error. The probit assumes that the error in the discrete choice model is distributed normally, while the logit assumption is that the cumulative distribution of the error is logistic. The logistic distribution is similar to the normal, but is has slightly more density in the extreme tails of the distribution.

The multinomial logit model for the case in which there are more than two alternatives from which to choose, suffers from the "independence of irrelevant alternatives" problem. The functional form forces the relative probability of choosing between A and B to be independent of a third alternative C. This creates a problem if C is a much closer substitute for one of the choices than for the other.

For example, in the active duty retention literature, researchers have estimated the member's choice among reenlisting, extending and leaving as a multinomial logit model. This is a poor choice, in this instance, because adding or increasing a reenlistment bonus, which increases the value of reenlisting relative to the other two choices, reduces the number of people extending by a greater proportion than it reduces the number of people leaving. Hence, the relative probability of choosing between extending or leaving is affected by the "irrelevant" alternative of reenlisting.

The "independence of irrelevant alternatives" assumption can be tested using the procedure outlined in Hausman and McFadden (1984).[16] If necessary, the somewhat more complex framework of a nested logit, or a covariance probit can be used to overcome this difficulty. The nested logit model is discussed in Maddala (1983)[17]. The covariance probit has not been used frequently in applied work.

The covariance probit model allows the correlation in the errors among the choices to vary with individual characteristics as well as the choice. It satisfies the "independence of irrelevant alternatives" criticism of the multinomial logit model, while also permitting the researcher to account for other unobserved differences affecting the choices. Its application to the case of reserve reenlistment, using the cross-sectional data base provided by the Reserve Components Survey, would contribute to the literature in applied econometrics, as well as to our knowledge of reserve reenlistment behavior.

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[16] See Jerry Hausman and Daniel McFadden, "Specification Tests for the Multinomial Logit", Econometrica, v.25, September 1984.

[17] See G.S. Maddala, Limited-dependent and Qualitative Variables in Econometrics, Cambridge University Press, 1983.

5.0 RESERVE DATA SOURCES

INTRODUCTION

A lack of reliable data has hampered previous research efforts on the Reserve components. However, the appropriate data bases appear to be finally coming together. The data will come from two sources: personnel files from the Defense Manpower Data Center (DMDC) and the 1986 Reserve Components Survey.

Our analysis file will begin with the Army sample from the 1986 Reserve Components Survey. This Survey contains data on the socio-economic status of the member, data about his civilian job, and data concerning the member's spouse and family that is not available from any other automated source. This data set will allow us to test propositions concerning the effects of a member's family, and spouse's labor market participation, and retention behavior that have not, heretofore, been explored. DMDC will merge this data set with information available from the members current and subsequent personnel files, and with certain data from active duty records. This will allow us to determine if the member subsequently left the reserves, if he joined another reserve unit and if he left to enter active duty.

Section 5.1 describes these data sources in greater detail and Section 5.2 discusses how these sources will be used to construct longitudinal files on reservists.

5.1 DATA SOURCES

5.1.1 DMDC Personnel Files

Though we plan to make greatest use of the Reserve Components Common Personnel Data System, we briefly review all the major sources of reserve data at DMDC.

Reserve Components Common Personnel Data System (RCCPDS): RCCPDS is the official source for reserve strength. It includes a transaction file for the Selected Reserves showing gains and losses, back to FY78. The file provides monthly data and includes information identifying the reservist, his unit, his occupational specialty, pay grade, and demographic characteristics, and of course, whether or not he continues to participate.

Reserve Cohort File: These files follow all reservists entering in a fiscal year. The Attrition Cohort file accounts for losses from the cohort, and also looks for reentry into the Reserves or transfer to active duty.

Reserve Career History: This cohort file, under development, looks backward, as well as forward, to determine whether or not a reserve accession had prior active or reserve service, and provides data concerning the prior service.

Prior Service Military Available (PSMA): The PSMA file includes recent losses from active duty service who are eligible to reenter either the active or reserve components.

Reserve Pay File: This file, under development, will provide records of reserve pay, drills attended, and special and incentive pays received.

5.1.2 1986 Reserve Components Surveys

The 1986 reserve components surveys, sponsored by DMDC was initially in the field in March 1986. It consists of two major portions. The Reserve Component Member Survey consists of a sample of about 121,000 selected reservists from all the Services. The 1986 Reserve Components Spouse Survey will take a census of the spouses of married members included in the Member Survey. This is estimated to be approximately 79,000 spouses. The survey promises to be an excellent source of information for retention studies. It will include data on the labor force status and civilian earnings of both member and spouse, hours of work in civilian employment, and other variables considered important in the theory of reserve participation.

5.2 DATA ANALYSIS FRAMEWORK

The 1986 Reserve Component Survey augmented with data from DMDC personnel records will support the development of Army reserve retention . These files, when merged, will yield an invaluable data base. By matching social security numbers, it will be possible to track reservists through their military career or to the point where they leave. This information will allow for an examination of the explanatory variables involved in the reenlistment decision.

The DMDC 1986 Reserve Component Survey contains valuable information on the reservists. First, there are military questions. They include questions on how reservists would respond to increased drill time and their plans for the future. Second, there is a financial section. The survey asks if the reservist holds an outside job, whether that job is full time or part time, their income and their spouse's income. Third, there are questions concerning the civilian employer. Since the vast majority of reservists consider the Reserves as a second job, the attitudes of the primary employer plays an important role. Questions about the employer's attitude towards the Reserves and his policies on leave for military training are asked. Finally, there is a section on demographics. These demographic questions will help determine what type of individual joins the Reserves. As a whole, the survey will provide important information on a reservists attitudes towards the Reserves.

The DMDC personnel files will add important information to the survey data. RCCPDS gives a military description of the reservist, i.e. his unit, occupation, etc. Since these files are updated monthly, they provide a longitudinal picture of a reservists career. The Cohort Files record reserve accessions as well as losses. It also looks for reentry into the Reserves at a later date (possibly a different unit) or transfer to active duty. When merged with the survey data, these files will provide an accurate longitudinal data base from which to analyze reenlistment behavior. Finally, a search of active duty prior service accession files will be made to determine whether a reserve member leaves to enter active duty service.

This rich data base will allow us to explore aspects of the reserve reenlistment decision that have yet to be examined. The analysis of the effects of family, civilian employer, spouse labor market participation, and the active duty alternative on reenlistment behavior are some of the issues that the creation of this data set will permit.

4.0 COMPENSATION-RETENTION DATA SETS

A key constraint in developing econometric models is the data available to estimate a model's parameters. A significant portion of the model development effort, therefore, has focused on assembling the best available data for estimating Army compensation-retention models. This chapter describes the data sets that will be used in the project. They fall into four categories: enlisted longitudinal files, data on compensation policy variables, data on post-service civilian earnings, and Selected Reserves data files.

4.1 ENLISTED LONGITUDINAL FILES

A variety of different types of data sets have been used to model enlisted retention. However, from an econometric viewpoint, the best data for estimating reenlistment models should have two characteristics. First, it should have the individual as the unit of observation. This allows an individual's choices to be linked directly to his particular values of the explanatory variables in a model. Using more aggregated data to estimate models of individual behavior can result in biased parameter estimates (see Theil (1971)). Second, the data set should be longitudinal. By observing the choices an individual makes at multiple decision points, we can implicitly model the effect of unmeasurable characteristics, such as tastes for military service, on the reenlistment decision. The ACOL-2 model, described in Chapter 2, demonstrates the usefulness of longitudinal data in modeling retention decisions.

Given these considerations, we constructed a new database that tracks individual soldiers through their active duty career. This database has the following features:

- o **Complete career history.** Each soldier in the database is followed from accession through separation (or until 1987, whichever comes first). By following individuals for their entire Army career, this data set allows for the estimation of retention models that include attrition as well as decisions made at the expiration of an enlistment term.

- o **AVF focus.** The database covers almost the entire All Volunteer Force period, including soldiers who accessed from FY74 through FY84. With multiple accession cohorts, it is possible to separate the effects on subsequent retention rates of accession conditions, such as unemployment, from the effects of changing force management policies.

- o **Comprehensive sample.** The database includes a large, random sample of all Army accessions. There are sufficient observations to model retention behavior by Career Management Field (CMF), by prior and nonprior service, and by other interesting subgroups.

- o **Rich data source.** There is a wide variety of information on each individual in the database. Data was collected at the accession point, from annual snapshots during the soldier's active duty career, and at separation. The data comes from Defense Manpower Data Center (DMDC) files, from records maintained by the Total Army Personnel Agency (TAPA), and from Training and Doctrine Command (TRADOC) data.

- o **Designed for analysis.** Special care has been taken to make the information, which covers a 14 year period, consistent across time. This facilitates the development of the analysis files used in estimating retention models. The database is also expandable, allowing new variables to be merged with the existing files as required.

Rather than develop specialized data sets useful for only this project, we have constructed a database with more general application. It is a resource that should aid future research on career force management as well. In the remainder of this section, we outline the development of the enlisted longitudinal files to date and discuss the next steps.

DMDC cohort, master, and loss records form the core of the enlisted longitudinal files. The data from DMDC was gathered in a four step process. First, a one-in-four random sample of all

Army, active duty, enlisted accessions (including prior service) from FY74 through FY84 was drawn, yielding a sample of approximately 450,000 soldiers. Accession variables, such as date of entry and home state at entry, were selected from the cohort record for each sample member. Second, composite aptitude scores were constructed from the ASVAB (or other entry) test results for each individual in the sample.

Next, fiscal year-end master file records were matched with the accession information. The master file records start with the first one following an individual's accession date and continue annually until separation or 1987, whichever comes first.[1] Altogether, about 1.5 million master file records were added in this process. Each record contains year-end information on a soldier's grade, ETS, MOS, marital status, and other variables. Finally, loss records for sample members were merged with the other data. Loss records include all the variables on the master record plus additional information about the characteristics of the separation.

The first step in creating the enlisted database, which has been completed as of the date of this report, was to combine the DMDC data into a single longitudinal record on each individual. This involved the following steps:

- **Variable selection.** The variables included in the file are shown in Figure 4.1. We eliminated repetitive data, such as unchanging characteristics appearing on every master record, and variables known to contain inaccurate or useless data.

- **Recoding.** Some variables in the DMDC data set had different codes for the different years. These variables were recoded to provide consistent values across the longitudinal record.

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[1]Master file records in our file continue beyond the separation point for individuals who leave the Army and return within 2 years.

DMDC Variables in the

Enlisted Longitudinal Files

I. Accession Data

SSN	Home of record
Date of Birth	Sex
Race	Ethnic group
Entry marital status	Education
Prior service	Date of accession
Date of contract (DEP)	Length of enlistment
Entry pay grade	Education benefits program
MEPS	Enlistment bonus
Other enlistment programs	Training MOS
AFQT	PULHES
Composite scores	

II. Data from the Master File Record

Primary MOS	Duty MOS
Education	Pay grade
Marital status	Number of dependents
CMF	Base Active Service date
ETS date	Date of rank
Pay Entry Base date	Latest reenlistment date
SRB multiplier	Unit zip code

III. Data from the Loss Record
(in addition to master file variables)

Character of service	Interservice separation code
Date of separation	Reenlistment eligibility

FIGURE 4.1

- **Range checking.** Variables were checked for values falling outside of the range defined in DMDC documentation.

- **Longitudinal organization.** Inconsistencies that only become apparent when yearly data are arranged in a time sequence, such as master and separation records for the same fiscal year, were resolved.

Appendix B describes the development of the enlisted database in more detail, including a record layout and codebook of the values for the variables.

With the DMDC data as a base, additional variables can be added to the enlisted longitudinal files. Current plans call for adding the following information:

- **SQT scores.** Skill Qualification Test (SQT) scores, along with the test date and the MOS tested, for fiscal years 1980 through 1985 will be matched with individuals in the database.

- **Variables from the TAPA EMF.** The TAPA Enlisted Master File includes some variables, not included in DMDC records, that may be useful in retention modeling, such as completion of NCO schools. Data for FY84 through FY87 are readily available and will be added to the database. Depending on resource constraints, data from FY79 through FY83 may be added as well.

- **Constructed variables.** Some information, such as whether a reenlistment or extension occurred in a particular year, must be constructed from a combination of variables in the database. In the process of developing analysis data sets from the enlisted longitudinal files, we are examining the best way to construct these variables. When the algorithms have been completed, these variables will be added to the database.

4.2 COMPENSATION POLICY VARIABLES

Section 3.7 described how we will estimate an individual's future military compensation, a key element in any retention model. Those calculations require information on the pay, bonuses, and allowances paid during the AVF period. In particular, we have collected the following data elements:

- **SRB multipliers.** Selective Reenlistment Bonus multipliers have been collected by zone, MOS, grade, and skill identifier for the AVF period.
- **Basic pay, BAQ, VHA, and tax advantage tables.** These have been assembled for FY74 through FY87.

4.3 POST-SERVICE CIVILIAN EARNINGS

Structural retention models, like the ACOL-2 model, require estimates of an individual's potential earnings if he leaves the Army. The ideal data set for analyzing retention would have information on post-service earnings merged onto the military career history of those who separated. This would allow for estimation of a civilian earnings function along with the retention model, providing estimates of civilian earnings that are corrected for sample selection bias. Currently, this data set does not exist.

To estimate post-service earnings functions in this project, we will use the best available data set, the Post-Service Earnings History File compiled by DMDC. This file includes Social Security and IRS earnings information on officers and enlisted personnel who separated from all services between 1972 and 1980.

From an analytical perspective, there are three potential problems with this data set. First, the observations have been grouped to preserve the confidentiality of the earnings data. As described above, this may cause aggregation bias in the estimated parameters of the civilian earnings function. Second, the set of variables available to explain variation in post-service earnings is limited. For example, military occupations are only known at the one-digit level. And third, the data set only includes separatees, making it impossible to estimate civilian earnings functions adjusted for sample selection bias.

Although there is nothing that can be done about the grouped structure of the data, we can deal with the other two problems by supplementing the Post-Service Earnings History File. Groups of both stayers and leavers, defined in the same way as the groups of separatees in the post-service earnings file, can be constructed from the enlisted longitudinal files. From these groups, new variables can be constructed and the sensitivity of estimated parameters to selection bias can be tested.

4.4 SELECTED RESERVES DATA

As noted in the design paper for the Selected Reserves retention analysis, one of the problems with previous studies has been the type of data available for analysis. Data sets constructed from personnel files alone do not provide all the variables implied by even the simplest models of reserve retention behavior. For example, wages on the primary job are a key determinant of labor supply in the moonlighting market, but this information is not found on Reserves personnel files. Alternatively, surveys can collect this type of data, but models estimated with survey data alone must use retention intentions, rather than actual behavior, as the outcome variable. As intentions do not always correlate highly with behavior, this is less than satisfactory.

To overcome these problems, the analysis of Selected Reserves retention in the Compensation Models Project will use a unique data set that combines survey and personnel records data. The core of this file is the Army portion of the 1986 Reserve Components Survey, which was administered by DMDC. Reserve Components Common Personnel Data System (RCCPDS) records from the survey administration date, 12 months after the survey, and 18 months after the survey have been merged with the survey data, providing information on retention behavior. In addition, individuals in the survey sample were matched against the enlisted master files to identify those who left the reserves to join the active duty forces. We have also collected Reserves bonus information for the period covered by the merged analysis file.

4.5 SUMMARY

The preparation of analysis data sets is an integral part of the model development process. Too often data are collected without any understanding of how they will be used analytically. This can lead to data sets that are incomplete or structured in such a way that useful analysis is impossible. It should be clear from reading this report that there is a close link between the theoretical compensation-retention models we have developed and our data collection efforts. By tapping a variety of sources, including military personnel files, administrative records, and survey results, and combining data from different sources, we have collected unique data sets on which to base the analysis.

APPENDIX A

THEORETICAL DEVELOPMENT OF THE ACOL AND GOTZ-McCALL MODELS

APPENDIX A

THEORETICAL DEVELOPMENT OF THE ACOL AND GOTZ-McCALL MODELS

As discussed in Chapter 3, the ACOL-2 model contains essential features of both the original ACOL and Gotz-McCall models. An understanding of these models provides insights into the workings of the ACOL-2 approach.

A.1 ANNUALIZED COST OF LEAVING (ACOL) MODEL

The ACOL model provides a simple, yet appealing, framework for analyzing military retention decisions. The major analytic insight of the ACOL model is that it provides a methodology for evaluating the income streams obtained from different prospective lengths of military service and linking the optimal income stream to retention. Here we briefly outline the ACOL approach.

For an individual at year of service (YOS) t, the expected returns to remaining s more years in military service, then entering the civilian sector, are:

$$RS(s) = \sum_{j=t}^{t+s} d^{j-t} M_j + d^{s+1} \left[R_{(t+s)} + W_{(t+s)} \right] \tag{A.1}$$

where:

RS(s)	=	expected present value of the income stream from s more years.
M_j	=	expected active duty pay in year j, j = t, . . . t + s.
$R_{(t+s)}$	=	expected present value of retirement income stream if the individual serves t+s years.
$W_{(t+s)}$	=	expected present value of the civilian wage stream if the individual serves t+s years.
d	=	$\frac{1}{1+p}$ where p = individual's rate of time preference.

The returns to leaving immediately are:

$$RL = R_t + W_t \tag{A.2}$$

where:

R_t = present value of the retirement income stream if the individual leaves at year t.

W_t = expected present value of the civilian wage stream if the individual leaves at year t.

Now let ψ be the individual's net preference for the nonpecuniary aspects of military versus civilian life.[1] The individual will prefer a strategy of remaining s more years to leaving immediately only if:

$$RS(s) - RL + \sum_{j=t}^{t+s} d^{j-t}\psi > 0 \quad \text{or}$$

$$COL(s) > -\sum_{j=t}^{t+s} d^{j-t}\psi \tag{A.3}$$

where COL(s) = RS(s) - RL is the financial cost of leaving now rather than staying s more years.

The ACOL criterion for deriving the horizon of future service s that is relevant for retention decisionmaking is easily derived. First divide both sides of Equation (A.3) by:

$$\sum_{j=t}^{t+s} d^{j-t}$$

Then the retention criterion is to stay if there exists at least one horizon s for which

$$\frac{COL(s)}{\sum d^{j-t}} > -\psi$$

Note that - ψ is the individual's net preference for civilian life and

$$\frac{COL(s)}{\sum d^{j-t}} = A_s \tag{A.4}$$

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[1]It can be thought of as the amount the individual would be willing to pay each year to stay in the military if annual military and civilian compensation were the same.

is the annualized cost of leaving (ACOL) variable. The retention criterion is to stay if

$$MAX\{A_s : s=1,\ldots,30-t\} > -\psi$$

The retention criterion in the ACOL model is to stay if and only if there exists at least one horizon of future service over which the annualized difference between military and civilian wages, A_s, exceeds the individual's net preference for civilian life.[2]

This retention criterion is intuitively appealing. Moreover, it has proven highly useful in analyses of alternative retirement systems because it permits comparison of income streams with radically different timing.

Letting $A_s = MAX\{A_s: s = 1, ..., 30 - t\}$, values of A_s are linked to retention rates as follows. If $-\psi$ is distributed across individuals via some distribution function, $F_t(-\psi)$, the retention rate r_t is:

$$r_t = F_t(A_{s*}) = Pr(A_{s*} > -\psi)$$

It is often assumed in the ACOL model that $F_t(-\psi)$ is logistic. Thus,

$$r_t = F_t(A_{s*}) = Pr(A_{s*} > -\psi) = \frac{1}{1 + e^{-(a_t + bA_{s*})}} \qquad \text{(A.5)}$$

where a_t is an intercept parameter, and b is a slope parameter. Once b has been estimated (see Enns, Nelson, and Warner, 1984; and Warner and Goldberg, 1982, 1984), the model is used to predict changes in retention rates by use of the first difference of the logistic function:

$$\Delta r_t = br_t(a - r_t)\Delta A_{s*} \qquad \text{(A.6)}$$

The effects of other factors on retention (e.g., the civilian unemployment rate and sea/shore rotation) have been added to the retention function. Warner and Goldberg (1982, 1984) have estimated the effects of these factors using historical Navy enlisted retention data. The effects of these factors have subsequently been incorporated into the Navy's enlisted ACOL model.

2Note that the horizon for which ACOL is maximized is not the optimal leaving point for each individual who stays. It is simply a convenient decision rule. If the maximum ACOL is not greater than the individual's distaste, than any other ACOL will also be less than the "distaste".

The Navy's enlisted ACOL model has also been revised to distinguish between reenlistments and extensions because some elements of compensation, primarily bonuses, may not affect each outcome proportionately. This distinction is made by a generalization of the logistic retention function shown above. We eschew a discussion of this distinction here to focus on the key features of the ACOL model.

Advantages. The ACOL model is an important contribution to retention analysis in that it incorporates future, as well as current, compensation into a single variable that influences current stay-leave decisions. Furthermore, the model permits inclusion of additional explanatory variables into the retention function, yielding greater insight and reducing the possibility of omitted variable bias.

The model is parsimonious and relatively straightforward to understand and to convert into an automated policy analysis model. The ACOL model has been demonstrated to generate fairly accurate forecasts of the changes in enlisted retention that have taken place over the past several years. Its ease of use and predictive ability have engendered much confidence in the model.

Shortcomings. A significant weakness of the ACOL model is that it fails to address the self-selection problem. This is a serious limitation which, until recently, was of unknown dimension. Most empirical models will predict minor changes in compensation, but more fundamental shifts (due to changes in the retirement system or substantial erosion of benefits) would impose much greater demands on the estimated model. In short, the ACOL model lacks a theoretical linkage between ACOL, other explanatory factors, and tastes on the one hand and the retention rate on the other (Warner, 1981). Moreover, because ACOL tends to rise with year of service along with the average value of the unobserved tastes, the ACOL coefficient will be biased.

A second problem is that the model, interpreted literally, implies deterministic predictions. For a given cohort, a value of ACOL at the second reenlistment decision point that is greater than the value that cohort faced at the first-term point implies that the second-term reenlistment rate will be unity. Anyone with a "taste" component greater than the first-term ACOL value negative in absolute value will have left at the first-term decision point.

A.2 STOCHASTIC COST OF LEAVING MODEL (SCOL)

The Stochastic Cost of Leaving (SCOL) model developed by Gotz and McCall (1980) offers a way to solve the selectivity problem. This is accomplished by specifying retention as a function of a cost of leaving variable (COL), an individual-specific taste parameter, ψ_{is}, (assumed to remain fixed over time), and a transitory stochastic term, E_{its}, that is random across individuals and time. The transitory error term includes all unobservable factors excluded from the model that are unrelated to the unknown permanent taste variable.

Gotz and McCall specify a complex derivation of each individual's COL (expressed in present value rather than annualized terms). In brief, COL represents the present value of future earnings opportunities over all possible military service intervals, where the value of each interval is weighted by the expected probability of serving over that interval. The probabilities, in turn, are predicted by the model according to each individual's permanent taste parameter.

Warner (1981) shows that their derivation yields the following interpretation. For individual i,

$$SCOL_i = \sum_{s=1}^{30-t} \prod_s \left[COL(s) + d^s \psi_i \right] \tag{A.7}$$

where COL(s) is defined as the cost of leaving now rather than remaining s more periods. Π_s is the ith individual's probability of staying exactly s more periods. It depends on ψ_i, his own taste for military service. Since $\Sigma \Pi_s = 1$, $SCOL_i$ is essentially a weighted average of the ith individual's cost of leaving defined over all possible intervals of future service.

After calculating $SCOL_i$ for each individual, the retention criterion is to stay if $SCOL_i + \varepsilon_t > 0$, where ε_t is the transitory error factor. Thus the individual stays if $\varepsilon_t > -SCOL_i$. It is assumed that the transitory errors, ε_t, are governed by the normal cumulative probability density $F(\varepsilon_t)$ with mean 0 and standard deviation σ_ε. Thus, if $F(\varepsilon_t)$ is the cumulative density of ε_t, the probability that the ith individual will remain in service from year 1 through year t is

$$\prod_{j=1}^{t} \int_{-SCOL_{ij}}^{\infty} dF(\varepsilon_j) \tag{A.8}$$

Equation (A.8) is the probability that a given individual (with taste factor ψ_i) will remain in service for t years.

We may now derive the survival rate of a whole cohort of individuals from year 1 through year t. Assume that $G(\psi_i)$ is assumed to be normal with mean μ_ψ and standard deviation σ_ψ. The survival rate to year t of the personnel in this initial cohort is

$$S_t = \int_{-\infty}^{\infty} \left[\prod_{j=1}^{t} \int_{-SCOL_{ij}}^{\infty} dF(\varepsilon_j) \right] dG(\psi_i) \tag{A.9}$$

where the conditional retention rate at YOS t is $r_t = S_t/S_{t-1}$. While this formulation looks mathematically formidable, all we are doing is weighting the survival probabilities of different personnel in the initial cohort by the relative frequencies of different values of ψ_i.

This formulation of the retention function handles the self-selection problem in an internally consistent fashion. For given values of μ_ψ, σ_ψ, σ_ε, and a specified military compensation system, the model predicts the whole career pattern of survival and retention rates. A simulation analysis by Warner (1981) showed that the model can accurately predict the pattern of retention rates under the current compensation system and that it gives plausible predictions of the effects of various changes in the system.

Advantages. The SCOL model represents an advance over the ACOL model in its ability to handle the self-selection process. Although the retention function in this model is much more complex than in the ACOL model, this complexity is necessary to overcome the selectivity problem.

Shortcomings. In our view, the SCOL model has two primary shortcomings. First, the calculation of SCOL values is complex and is more cumbersome and time consuming than the calculation of ACOL values. Even in the age of fast computers, this can be a drawback in a policy analysis environment. It is not clear how much additional rigor or realism is attained by calculation of SCOL values rather than calculation of ACOL values. Do individuals in fact form retention decisions by evaluating the costs of leaving over all possible future horizons of service, as the SCOL model presumes, or do they base decisions on leaving costs derived from a single, dominant horizon, as the ACOL model presumes? We believe that the ACOL model's reliance on a few key time horizons may, in fact, be an adequate characterization of the retention decisionmaking process.

The second drawback to the SCOL approach is more serious. SCOL is a single-variable model. It is a model in which the state of the civilian economy, personal attributes, certain military personnel policies, and other environmental factors are either ignored or included as part of the unobservable taste or transitory error factors, ψ and E_t. Compensation is the only factor determining retention; these other factors come into play only insofar as they affect the model parameters μ_ψ, σ_ψ, and σ_ε. Thus, it is not possible to relate other variables to military retention.

APPENDIX B

DOCUMENTATION FOR ARMY ENLISTED LONGITUDINAL FILES

Prepared by FU ASSOCIATES, LTD.

DOCUMENTATION FOR ARMY EPR DATA BASE
APRIL 5, 1988

Two tapes containing data for Army Enlisted Personnel were requested from DMDC by Dave Smith of SRA Corporation. The tapes were created from a 25% sample of all Army Enlisted Accessions between fiscal years 1974-1984 (07/01/73 - 09/30/84). This was a random sampling of every fourth accession record from each yearly file. Next, the Social Security numbers resulting from the random sampling were matched with the Fiscal Year end Master/Loss files for Army Enlisted personnel and with the ASVAB Composite Scores files. The Loss records picked up represent the latest Loss record for that individual for that Fiscal Year, regardless of the type of Loss. The resulting file has an Accession record followed by 0 to 14 Master records, 0 to 14 Loss records, and 1 Composite record.

Each record is 103 characters long with a match flag in the 103rd position indicating the type of record it is. For a Master/Loss record the 101st position contains the Fiscal Year of that record. For Accession records the Fiscal Year of the record can be derived from the field "Date of Entry - Year" and "Date of Entry - Month", as this is the date that an individual physically begins his/her service (for those who enter the Delayed Entry Program, this date represents a contract date to the U.S. Army, but "Date of Entry" remains the date when duty begins). For Composite records, the date of the record is the "Date of Entry" from the Accession record for this individual, as Composite tests are administered upon Accession.

The data elements to be extracted from each type were told to Fu Associates by Dave Smith of SRA Corporation. They are outlined below.

From an Accession record:

Social Security number
Home of Record (zip code)
Home of Record (state code)
Home of Record (county code)
Date of Birth (year, month, day)
Sex
Race
Ethnic Group
Race Ethnic
Marital Status
Highest Year of Education
Prior Service
Date of Entry into Delayed Entry Program (year, month)
Time in Delayed Entry Program (months)
Date of Entry (year, month, day)

Term of Enlistment
Entry Pay grade
Program Enlisted for 1-5
AFEES/EPS Station
Enlistment Bonus
Enlistment Option
Training MOS
Training MOS Skill
Identifiers #1-2
PULHES
Waiver Code
Test Form
AFQT Percentile
AFQT Groups
Original AFQT Percentile
Original AFQT Groups
Aptitude Areas #1-16

From a Master record:

DoD Primary Occupation Code
DoD Duty Occupation Code
Highest Year of Education
Pay Grade
Marital Status
Number of Dependents
Primary MOS
Primary MOS Skill Identifiers #1-2
Duty MOS - available after 9/78
Base Active Service Date (year, month, day)
Duty MOS Skill Identifiers #1-2
Career Management Field available after 07/78
ETS Date (year, month, day)
Date of Rank (year, month)
Date of Latest Reenlistment (year, month)
Component
SRB Multiplier available after 7/85
Pay Entry Base Date (year, month, day)
Unit Identification Code available after 12/74
Unit Zip Code available after 10/79

From a Loss record:

All of the above Master record information as well as:

Character of Service
Reenlistment Eligibility
InterService Separation Code
Separation Date

It was proposed by Fu Associates and Dave Smith that for those years where an individual had both a Loss record and a Master record, and the Loss was a "true" loss (indicated by an ISC Code between 0-99) the information in the Loss record would supersede the information in the Master record. If the Loss was not a "true" loss (indicated by ISC code 100+) the Master data would be kept and the information unique to a Loss record would be kept as well. For both cases, if information is missing from the superseding record but exists in the subordinated record that information will be retained.

For Fiscal Years 1984+ data from the Army EMF files will be added for every year that data exists for an individual. The fields to be used from the EMF data as outlined by Dave Smith, are listed below.

Citizenship Status
Term of Service
Language Identity
NCO Education
Date Last Permanent Change of Station (year, month)
Additional Pay Eligibility
Proficiency Pay
Date Eligible to Return Overseas
Date Departed Last Overseas
Number Times Enlisted/Reenlisted
Enlisted Option Code
Career Management Field
Skill Qualification Test MOS Tested
SQT - Test Date
SQT - Percentile Score
Previous SQT - MOS Tested
Previous SQT - Test Date
Previous SQT - Percentile Score
Exceptional Family Member Program
Current Promotional Points Date
Current Promotional Points

Upon receipt of the tapes, Fu Associates pulled the first 1000 records and separated them into five files depending on the type of record. This was based on the five possible formats of the incoming records: (1) Accession records (2) Master/Loss records 1974-1975 (3) Master/Loss records 1976-1984 (4) Master/Loss records 1985-1987 (5) Composite Scores. Frequencies were then run on the data to determine the range of values for each field. This helped assess the usefulness and accuracy of the fields chosen for the final file to be created.

The record layout for the final file was proposed by Fu Associates and presented to Dave Smith of SRA and Dave Horne of ARI, Army Research Institute. Fu Associates is currently creating a preliminary file as per the proposed file layout. Ultimately two files will be created. One will be a fixed length character file to support a variety of software applications. The second will be a SAS data base created from the character file. Both files will contain records consisting of core Accession/Composite data and Master data or Master and Loss data for every year available for the individual.

Frequencies will be run on the preliminary file created by Fu Associates. DMDC in California recommends throwing out all values which are not in the range specified by the documentation or by their personnel. Fu Associates proposes looking at each out-of-range value and its frequency. If the occurrence of an out-of-range value is random, a 0 or a blank can be substituted, indicating "unknown". If an out-of-range value occurs with some frequency, that value should be investigated as having possible significance omitted in the documentation. Fu Associates will present all such cases to ARI and SRA for a decision before proceeding.

The following fields have already been specifically targeted for recoding or possible omission:

<u>From Accession records:</u>

1. <u>Home of Record (county code):</u> this field was found to have data values of up to 5 digits even though a county code has 3 digits. It appears that the left 2 digits are state codes which already appear in the field "Home of Record State". Fu Associates proposed dropping these left 2 digits and retaining the rightmost three digits as an individual's home county code.

2. <u>Ethnic Group:</u> according to Army documentation, this field was coded as follows until Fiscal Year 1982 (10/81).

1. Spanish Descent
2. American Indian
3. Asian American
4. Puerto Rican
5. Filipino
6. Mexican American
7. Eskimo
8. Aleut
9. Cuban American
10. Chinese
11. Japanese
12. Korean
13. Other
14. None

This field was coded as follows from Fiscal Year 1982 (10/81) and after:

1.	Mexican	11.	Korean
2.	Puerto Rican	12.	Indian
3.	Cuban	13.	Filipino
4.	Latin American	14.	Vietnamese
5.	Other Hispanic Descent	15.	Other Asian Descent
6.	Aleut	16.	Melanesian
7.	Eskimo	17.	Micronesian
8.	N. American Indian	18.	Polynesian
9.	Chinese	19.	Other Pacific Island Des
10.	Japanese	20.	Other/None

Fu Associates proposed keeping the later codes and recoding the data prior to Fiscal Year 1982 (10/81) as follows:

1.	Spanish Descent	=	21.	Spanish Descent (pre FY82)
2.	American Indian	=	8.	N. American Indian
3.	Asian American	=	22.	Asian American (pre FY82)
4.	Puerto Rican	=	2.	Puerto Rican
5.	Filipino	=	13.	Filipino
6.	Mexican American	=	1.	Mexican
7.	Eskimo	=	7.	Eskimo
8.	Aleut	=	6.	Aleut
9.	Cuban American	=	3.	Cuban
10.	Chinese	=	9.	Chinese
11.	Japanese	=	10.	Japanese
12.	Korean	=	11.	Korean
13.	Other	=	20.	Other/None
14.	None	=	20.	Other/None

3. Race Ethnic: according to Army documentation prior to Fiscal Year 1982 (10/81), this field was coded as follows:

1.	White	3.	Black
2.	White Spanish	4.	Malayan

After Fiscal Year 1982 (10/81), this field was coded as follows:

1.	White	4.	American Indian Alaskan Native
2.	Black	5.	Asian/Pacific Islander
3.	Hispanic	6.	Other/Unknown

Fu Associates proposed keeping the later codes and recoding information prior to FY 1982 (10/81), as follows:

0.		=	6.	Other/Unknown
1.	White/Non-Spanish	=	1.	White
2.	White/Spanish	=	3.	Hispanic
3.	Black	=	2.	Black
4.	Malayan	=	5.	Asian/Pacific Islander

5. <u>Prior Service:</u> according to the documentation, prior to 03/79, this field was coded as follows:

1.	Non-prior Service	11.	Prior Service - Air Force
7.	Prior Service - Army	13.	Prior Service - Marine Corps
9.	Prior Service - Navy	16.	Prior Service - Other

After 03/79 this field was coded as follows:

1.	Non-prior Service	16.	Prior Service

Fu Associates and Dave Smith of SRA propose keeping the <u>old</u> codes and recoding any instances of "16" after 03/79 as a 17 - Prior Service - Unknown. This way the more detailed information from the earlier years is not lost and the ambiguous number "16" from the later data remains distinct.

7. <u>AFQT Percentile Original, AFQT Group Original</u>: according to DMDC these fields are not useful. They represent AFQT scores which were **incorrectly** normed against the 1944 general population test scores. In 1984, AFQT scores from 1976 and on were normed correctly against the 1980 general population test scores and put into the fields "AFQT Percentile" and "AFQT Group". Given this information, it is recommended that the original incorrect scores not be part of the final file.

8. <u>Enlistment Bonus and Enlistment Option:</u> A test run of 21,000 records showed that all data from FY's 1974-1975 was invalid for this field. At this time Fu Associates recommends leaving this field blank for these years in the final data base.

<u>From Master/Loss records:</u>

1. <u>Marital Status:</u> according to the documentation, up until 07/85 this field was coded as follows:

1 - Single	2 - Married

After 07/85 this field was coded as follows:

1 - Single (never been married)
2 - Married
3 - No Longer Married

Fu Associates proposes keeping data after 07/85 as is and recoding any "1" prior to this as a "4 - Single (pre 07/85)". Creating a new value will allow a later "1" to remain distinct from an earlier "1" .

2. <u>Duty MOS, Skill Identifiers #1-2:</u> according to the documentation this field is only available after Fiscal Year 1979 (09/78).

3. <u>Career Management Field:</u> according to DMDC this field is available after 07/78.

4. SRB Multiplier: according to the documentation, this field is available after 07/85.

5. Unit Identification Code: according to the documentation, this field is available after 12/74.

6. Unit Zip Code: according to the documentation, this field is available after Fiscal Year 1980 (10/79).

From a Loss record:

1. Character of Service: according to the documentation and DMDC after Fiscal Year 1983 (10/01/82) the value "5 - Uncharacterized" was added to the code and a blank was assumed "unknown", but prior to this date a blank in this field is ambiguous as it could mean either uncharacterized or unknown.

2. Reenlistment Eligibility: according to the documentation prior to Fiscal Year 1979 (10/01/78) this field was coded as follows:

1 - Eligible
2 - Ineligible

After 10/01/78 (FY79), a set of 21 codes was developed to specify the type of eligibility/ineligibility. Fu Associates proposed keeping all values after FY79 and recoding the earlier "1" as a "5 - Eligible (pre FY79)" and the earlier "2 - Ineligible (pre FY79)" so that they remain distinct from the later "1" and "2".

3. InterService Separation Code: according to the documentation, after Fiscal Year 1986 (10/85) the code "016 - Unqualified for Active Duty" became "016 - Unqualified for Active Duty - Other" and "017 - Failure to Meet Weight/Body Fat Standards". Fu Associates proposes keeping the later codes and recoding the pre FY86 "016" as an "018 - Unqualified for Active Duty or Failure to Meet Weight/Body Fat Standards". Again this is to keep later more detailed data distinct from earlier, more ambiguous data.

4. Base Pay Effective Date: In a test run of 21000 records, Fu Associates found that every single loss record for 1974 had invalid data in this field. At this time this field will remain blank for all 1974 loss records rather than assign an invalid date to the final data base.

It should be noted that Fu Associates verified with DMDC in California, that all files were delivered with the original coding intact. Therefore there will be no recoding of values which have already been updated.

At this point there are no proposed changes to the Composite records.

During the creation of a test file as per the proposed file layout, Fu Associates found that some individuals had more than one Accession record. Since DMDC took every fourth record from each yearly Accession file, this is a random occurrence. An individual would have to be picked up as a fourth occurrence in more than one yearly file. This situation was presented to Dave Horne of ARI and Dave Smith of SRA.

In order to keep the variable Social Security Number a unique number (no two records could have the same SSN), it was decided that space would be made available in the output record for 12 fields from a second Accession record. It should be noted that if a third, fourth, etc. occurrence of an Accession record should be found, the interim Accession record(s) will be replaced by the data from the last Accession record found. The final record will always contain an individual's first occurrence of an Accession record and if there is more than one Accession record for that individual, the last occurrence of an Accession record. (There may exist, of course, other Accession records for any individual, that were not part of the 25% sample received from DMDC).

1. Home of Record - State
2. Entry Marital Status
3. Entry Education Level
4. Date of Entry - Year, Month, Day
5. Term of Enlistment
6. Entry Paygrade
7. Program Enlisted for #1-5
8. Enlistment Bonus
9. Enlistment Option
10. Training MOS
11. Waiver
12. AFQT

It should also be noted that in 1976, when the government fiscal year changed from July to June to October to September. This file puts accession records during July, 1976 - September, 1976 as part of FY 1976.

On March 24, 1988 Fu Associates met with Dave Smith and Dave Horne. The following decisions were made:

1. The fields Education Certificate and Record Identification were dropped from the Accession section of the final data base due to lack of valid data from the DMDC files.

2. Enlistment Option and Enlistment Bonus were determined to be invalid for FY's 1974-75.

3. AFQT Percentiles of 100 were not kept as valid data for the final data base.

4. Base Pay Effective Date will not be used for loss records from FY 1974.

5. In those cases where a second accession occurs, the <u>first</u> set of composite scores will be assigned to the final data base even if they are blank and the second set will not be kept.

6. All transaction records, ISC codes of 0 and 100+, where a master record exists for the same year, will be used to fill in any missing data from the existing master record. It will not be used to **override** any existing master record data, merely to fill in blank fields.

7. All loss records, ISC codes 01-99, where master file data already exist will override this data. If a data element is blank in the loss record but not in the master record the master file data will remain in place.

During further testing, Fu Associates discovered that often a loss/transaction record can predate the date of entry on the Accession record. This occurs when an individual reaccesses in the same fiscal year as he/she had quit the service or had some other transaction. Since our file may only have the second (or third or fourth) accession the prior loss record contains old and incompatible data. For this reason, any loss records prior to the date of entry on the accession record will be dropped.

The program was run on the full DMDC tapes on April 4th, 1988. It should be noted that there was at least one occurrence of a second Accession with the same date of entry as the first Accession. If a subsequent Accession occurred the second Accession data would have been replaced by this third (or fourth, etc.) accession.

Since the data element Current Assignment Code was not available from Winnie Young's EMF files. It was dropped from the final file.

RECORD LAYOUT FOR ARMY EPRDB
APRIL 5, 1988

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
1. SSN	Social Security #	000000001-999999998	ACCESSION/ COHORT	1-4	1-9
2. HOMZIP1	Home of Record	001-999	ACCESSION/ COHORT	7-8	10-12

CODE VALUES:

THREE DIGIT ZIPS	STATE	THREE DIGIT ZIPS	STATE
006,007,009	PUERTO RICO	500-528	IOWA
010-027	MASSACHUSETTS	530-549	WISCONSIN
028-029	RHODE ISLAND	550-567	MINNESOTA
030-038	NEW HAMPSHIRE	570-577	NORTH DAKOTA
039-049	MAINE	570-577	SOUTH DAKOTA
050-059	VERMONT	590-599	MONTANA
060-069	CONNECTICUT	600-629	ILLINOIS
070-089	NEW JERSEY	630-658	MISSOURI
088	VIRGIN ISLANDS	660-279	KANSAS
090-149	NEW YORK	680-693	NEBRASKA
150-196	PENNSYLVANIA	700-714	LOUISIANA
197-199	DELAWARE	716-729	ARKANSAS
200-205	DISTRICT OF COLUMBIA	730-749	OKLAHOMA
206-219	MARYLAND	750-799	TEXAS
220-246	VIRGINIA	800-816	COLORADO
247-268	WEST VIRGINIA	820-831	WYOMING
270-289	NORTH CAROLINA	832-838	IDAHO
290-299	SOUTH CAROLINA	840-847	UTAH
300-319	GEORGIA	850-865	ARIZONA
320-339	FLORIDA	870-884	NEW MEXICO
350-369	ALABAMA	890-898	NEVADA
370-385	TENNESSEE	900-966	CALIFORNIA
386-397	MISSISSIPPI	967 (99)	AMERICAN SAMOA
400-427	KENTUCKY	967-968	HAWAII
430-458	OHIO	969	GUAM
460-479	INDIANA	970-196	OREGON
480-499	MICHIGAN	980-994	WASHINGTON
		995-999	ALASKA

3. HOMZIP2	Home of Record	01-99	ACCESSION/ COHORT	9	13-14

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
4. HOMEREC	Home of Record State - FIPS	01-56	ACCESSION/ COHORT	10	15-16

CODE VALUES:

STATE CODE	STATE	STATE CODE	STATE
01	ALABAMA	29	MISSOURI
02	ALASKA	30	MONTANA
03	AMERICAN SAMOA	31	NEBRASKA
04	ARIZONA	32	NEVADA
05	ARKANSAS	33	NEW HAMPSHIRE
06	CALIFORNIA	34	NEW JERSEY
07	CANAL ZONE	35	NEW MEXICO
08	COLORADO	36	NEW YORK
09	CONNECTICUT	37	NORTH CAROLINA
10	DELAWARE	38	NORTH DAKOTA
11	DISTRICT OF COLUMBIA	39	OHIO
12	FLORIDA	40	OKLAHOMA
13	GEORGIA	41	OREGON
14	GUAM	42	PENNSYLVANIA
15	HAWAII	43	PUERTO RICO
16	IDAHO	44	RHODE ISLAND
17	ILLINOIS	45	SOUTH CAROLINA
18	INDIANA	46	SOUTH DAKOTA
19	IOWA	47	TENNESSEE
20	KANSAS	48	TEXAS
21	KENTUCKY	49	UTAH
22	LOUISIANA	50	VERMONT
23	MAINE	51	VIRGINIA
24	MARYLAND	52	VIRGIN ISLANDS
25	MASSACHUSETTS	53	WASHINGTON
26	MICHIGAN	54	WEST VIRGINIA
27	MINNESOTA	55	WISCONSIN
28	MISSISSIPPI	56	WYOMING

5. HOMCNTY	Home of Record County - FIPS	01-999	ACCESSION/ COHORT	63-64	17-19

Information in this field which is 5 digits, i.e. 25025, 33005, 33011, etc. should have the first two digits dropped as these are state codes entered unnecessarily. '025', '005', '011' are the correct County codes.

6. DOBYY	Date of Birth Year	01-99	ACCESSION/ COHORT	13	20-21
7. DOBMM	Date of Birth Month	01-12	ACCESSION/ COHORT	14	22-23

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
8. DOBDD	Date of Birth Day	01-31	ACCESSION/ COHORT	15	24-25
9. SEX	Sex	1-2	ACCESSION/ COHORT	19	26

CODE VALUES: 1. MALE 2. FEMALE

10. RACE	Race	1-3	ACCESSION/ COHORT	20	27

CODE VALUES: 0. UNKNOWN 1. WHITE 2. BLACK 3. OTHER

11. ETHGP	Ethnic	01-22	ACCESSION/ COHORT	21	28-29

CODE VALUES:

Information after 10/81 is coded as follows:

1. MEXICAN
2. PUERTO RICAN
3. CUBAN
4. LATIN AMERICAN
5. OTHER HISPANIC DESCENT
6. ALEUT
7. ESKIMO
8. N. AMERICAN INDIAN
9. CHINESE
10. JAPANESE
11. KOREAN
12. INDIAN
13. FILIPINO
14. VIETNAMESE
15. OTHER ASIAN DESCENT
16. MELANESIAN
17. MICRONESIAN
18. POLYNESIAN
19. OTHER PACIFIC ISLAND DESCENT
20. OTHER/NONE

Information prior to 10/81 will be recoded as follows:

OLD	NEW
1. SPANISH DESCENT	21. SPANISH DESCENT (pre 10/81)
2. AMERICAN INDIAN	8. N. AMERICAN INDIAN
3. ASIAN AMERICAN	22. ASIAN AMERICAN (pre 10/81)
4. PUERTO RICAN	2. PUERTO RICAN
5. FILIPINO	13. FILIPINO
6. MEXICAN AMERICAN	1. MEXICAN
7. ESKIMO	7. ESKIMO
8. ALEUT	6. ALEUT
9. CUBAN AMERICAN	3. CUBAN
10. CHINESE	9. CHINESE
11. JAPANESE	10. JAPANESE
12. KOREAN	11. KOREAN
13. OTHER	20. OTHER/NONE
14. NONE	20. OTHER/NONE

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
12. REDCAT	Race Ethnic	1-6	ACCESSION/ COHORT	22	30

CODE VALUES:

Information after 10/81 is coded as follows:

1. WHITE
2. BLACK
3. HISPANIC
4. AMERICAN INDIAN/ALASKAN NATIVE
5. ASIAN/PACIFIC ISLANDER
6. OTHER/UNKNOWN

Information prior to 10/81 will be recoded as follows:

OLD		NEW	
0.		6.	OTHER/UNKNOWN
1.	WHITE/NON-SPANISH	1.	WHITE
2.	WHITE SPANISH	3.	HISPANIC
3.	BLACK	2.	BLACK
4.	MALAYAN	5.	ASIAN/PACIFIC ISLANDER

13. ENTRYMS	Marital Status	1,2,10-29	ACCESSION/ COHORT	23	31-32

CODE VALUES:

1. SINGLE - DEPENDENTS UNKNOWN
10. SINGLE - NO DEPENDENTS
11. SINGLE - ONE DEPENDENT
12. SINGLE - TWO DEPENDENTS
13. SINGLE - THREE DEPENDENTS
14. SINGLE - FOUR DEPENDENTS
15. SINGLE - FIVE DEPENDENTS
16. SINGLE - SIX DEPENDENTS
17. SINGLE - SEVEN DEPENDENTS
18. SINGLE - EIGHT DEPENDENTS
19. SINGLE - NINE DEPENDENTS
2. MARRIED - DEPENDENTS UNKNOWN
20. MARRIED - NO DEPENDENTS
21. MARRIED - ONE DEPENDENT
22. MARRIED - TWO DEPENDENTS
23. MARRIED - THREE DEPENDENTS
24. MARRIED - FOUR DEPENDENTS
25. MARRIED - FIVE DEPENDENTS
26. MARRIED - SIX DEPENDENTS
27. MARRIED - SEVEN DEPENDENTS
28. MARRIED - EIGHT DEPENDENTS
29. MARRIED - NINE DEPENDENTS

14. ENTRYED	Highest Year of Education at Entry	01-13	ACCESSION/ COHORT	18	33-34

CODE VALUES:

1. 1-7 YEARS
2. 8 YEARS
3. 1 YEAR HIGH SCHOOL
4. 2 YEARS HIGH SCHOOL
5. 3-4 YEARS HIGH SCHOOL (NO DIPLOMA)
6. HIGH SCHOOL DIPLOMA
7. 1 YEAR COLLEGE
8. 2 YEARS COLLEGE
9. 3-4 YEARS COLLEGE (NO DEGREE)
10. COLLEGE GRADUATE
11. MASTERS OR EQUIVALENT
12. DOCTORS OR EQUIVALENT
13. HIGH SCHOOL G.E.D.

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
15. PRIRSRC	Prior Service	1,7,9,11,13, 16,17	ACCESSION/ COHORT	40	35-36

Information prior to 03/79 is coded as follows:

CODE VALUES:

1. NON-PRIOR SERVICE
7. PRIOR SERVICE ARMY
9. PRIOR SERVICE NAVY
11. PRIOR SERVICE AIR FORCE
13. PRIOR SERVICE MARINE CORPS
16. PRIOR SERVICE/OTHER

Information after 03/79 will be recoded as follows:

1. NON-PRIOR SERVICE
16. PRIOR SERVICE
1. NON-PRIOR SERVICE
17. PRIOR SERVICE/UNKNOWN

16. DEPYY	Date of Entry into DEP Year	01-99	ACCESSION/ COHORT	186	37-38
17. DEPMM	Date of Entry into DEP Month	01-12	ACCESSION/ COHORT	187	39-40
18. MONSDEP	Months in DEP	01-11	ACCESSION/ COHORT	188	41-42
9. DOEYY	Date of Entry Yr	01-99	ACCESSION/ COHORT	58	43-44
20. DOEMM	Date of Entry Mn	01-12	ACCESSION/ COHORT	59	45-46
21. DOEDD	Date of Entry Day	01-31	ACCESSION/ COHORT	60	47-48
22. TERMENL	Term of Enlistment	01-99	ACCESSION/ COHORT	61	49-50

Number of years of service for which an individual has contracted.

23. ENTRYPG	Entry Pay Grade	00-31	ACCESSION/ COHORT	62	51-52

CODE VALUES:

0.	E00	8.	E08	20.	O00	27.	O07
1.	E01	9.	E09	21.	O01	28.	O08
2.	E02	10.	W00	22.	O02	29.	O09
3.	E03	11.	W01	23.	O03	30.	O10
4.	E04	12.	W02	24.	O04	31.	O11
5.	E05	13.	W03	25.	O05		
6.	E06	14.	W04	26.	O06		
7.	E07						

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
24. PGMNLF1	Program Enlisted for 1		ACCESSION/ COHORT	65	53
25. PGMNLF2	Program Enlisted for 2		ACCESSION/ COHORT	66	54
26. PGMNLF3	Program Enlisted for 3		ACCESSION/ COHORT	67	55
27. PGMNLF4	Program Enlisted for 4		ACCESSION/ COHORT	68	56
28. PGMNLF5	Program Enlisted for 5		ACCESSION/ COHORT	69	57

CODE VALUES:

0 - NO VEAP KICKER AND NO EUROPEAN ASSIGNMENT
1 - VEAP KICKER AND CONUS ASSIGNMENT
2 - NO VEAP KICKER WITH EUROPEAN ASSIGNMENT
3 - VEAP KICKER WITH EUROPEAN ASSIGNMENT
4 - RAISED VEAP KICKER
5 - NO VEAP KICKER
6 - $2000 VEAP KICKER
7 - $4000 VEAP KICKER
8 - $6000 VEAP KICKER
A - 2 YEAR VEAP $8000
B - 3 YEAR VEAP $12000
C - 4 YEAR VEAP $12000
D - TUITION ASSISTANCE/2 YEAR ENLISTMENT
E - TUITION ASSISTANCE/3 YEAR ENLISTMENT
F - TUITION ASSISTANCE/4 YEAR ENLISTMENT
G - NONCONTRIBUTORY VEAP-$2000-2 YEAR ENLISTMENT
H - NONCONTRIBUTORY VEAP-$4000-3 YEAR ENLISTMENT
I - NONCONTRIBUTORY VEAP-$6000-4 YEAR ENLISTMENT

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
29. AFESMEP	AFEES/EPS	01-78	ACCESSION/ COHORT	72	58-59

THE FOLLOWING VALUES ARE ACCEPTABLE FOR ANY RECORD DATE:

1. ALBANY, NY
3. BALTIMORE, MD
5. BECKLEY, WV
6. BOSTON, MA
7. BUFFALO, NY
8. CINCINNATI, OH
9. CLEVELAND, OH
10. COLUMBUS, OH
12. HARRISBURG, PA
13. LOUISVILLE, KY
14. MANCHESTER, NH
15. NEWARK, NJ
16. NEW HAVEN, CT
18. PHILADELPHIA, PA
31. FT. JACKSON, SC
32. JACKSON, MA
33. JACKSONVILLE, FL
34. KNOXVILLE, TN
35. MEMPHIS, TN
36. MONTGOMERY, AL
37. NASHVILLE, TN
38. RALEIGH, NC
39. SAN JUAN PR
41. ALBEQUERQUE, NM
42. AMARILLO, TX
43. DALLAS, TX
44. EL PASO, TX
45. HOUSTON, TX
56. INDIANAPOLIS, IN
57. KANSAS CITY, MO
58. MILWAUKEE, WI
59. MINNEAPOLIS, MN
60. OMAHA, NE
61. SIOUX FALLS, SD
62. SAINT LOUIS, MO
63. BOISE, ID
64. BUTTE, MT
65. SALT LAKE CITY,
66. FRESNO, CA
67. LOS ANGELES, CA
68. OAKLAND, CA
69. PHOENIX, AZ

19. PITTSBURGH, PA	46. LITTLE ROCK, AR	70. PORTLAND, OR
20. PORTLAND, ME	47. NEW ORLEANS, LA	71. SEATTLE, WA
22. RICHMOND, VA	48. OKLAHOMA CITY, OK	72. SPOKANE, WA
24. SPRINGFIELD, MA	49. SAN ANTONIO, TX	73. ANCHORAGE, AK
25. SYRACUSE, NY	50. SHREVEPORT, LA	74. HONOLULU, HI
26. WILES-BARRE, PA	51. CHICAGO, IL	75. GUAM
27. FT. HAMILTON, NY	52. DENVER, CO	76. SAN DIEGO, CA
28. ATLANTA, GA	53. DES MOINES, IA	77. ATLANTIC ENL
29. CHARLOTTE, NC	54. DETROIT, MI	78. PACIFIC ENL
30. CORAL GABLES, FL	55. FARGO, ND	

THE FOLLOWING CODES ARE ONLY VALID FOR RECORDS PRIOR TO 01/01/82:

2. ASHLAND, KY	21. PROVIDENCE, RI
4. BANGOR, ME	23. ROANOKE, VA
11. FAIRMONT, WV	40. ABILENE, TX
17. WHITEHALL, NY	

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
30. ENLBON	Bonus Option	1-6	ACCESSION/ COHORT	73	60

Available from FY76 only.
CODE VALUES:

1. COMBAT ARMS $0-1,500
2. COMBAT ARMS $1,500-3000
3. COMBAT ARMS $3000+
4. NON COMBAT ARMS $0-1,500
5. NON COMBAT ARMS $1500-3000
6. NON COMBAT ARMS $3000+

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
31. ENLOP	Enlistment Option	1-21	ACCESSION/ COHORT	74	61-62

Available from FY1976 only.
CODE VALUES:

1. ADVANCED ENLISTMENT GRADE PLUS TRAINING OR SKILL, UNIT OR GEOGRAPHIC LOCATIONS, AND BUDDY PROGRAM.
2. ADVANCED ENLISTMENT GRADE PLUS UNIT OR GEOGRAPHIC LOCATION AND BUDDY PROGRAM.
3. ADVANCED ENLISTMENT GRADE PLUS UNIT OR GEOGRAPHIC LOCATION.
4. ADVANCED ENLISTMENT GRADE.
5. ADVANCED ENLISTMENT GRADE PLUS UNIT OR GEOGRAPHIC LOCATION AND TRAINING OR SKILL.
6. ADVANCED ENLISTMENT GRADE PLUS TRAINING OR SKILL GUARANTEE.
7. ADVANCED ENLISTMENT GRADE PLUS BUDDY PROGRAM.
8. ACCELLERATED PROMOTION PLUS TRAINING OR SKILL GUARANTEE, UNIT OR GEOGRAPHIC LOCATION AND BUDDY PROGRAM.
9. ACCELERATED PROMOTION PLUS UNIT OR GEOGRAPHIC LOCATION AND BUDDY PROGRAM.
10. ACCELERATED PROMOTION PLUS UNIT OR GEOGRAPHIC LOCATION.
11. ACCELERATED PROMOTION.
12. ACCELERATED PROMOTION PLUS BUDDY PROGRAM AND TRAINING OR SKILL GUARANTEE.
13. ACCELERATED PROMOTION PLUS TRAINING OR SKILL GUARANTEE.
14. ACCELERATED PROMOTION PLUS BUDDY PROGRAM.

15. TRAINING OR SKILL GUARANTEE PLUS UNIT OR GEOGRAPHIC LOCATION AND BUDDY PROGRAM.
16. UNIT OR GEOGRAPHIC LOCATION PLUS BUDDY PROGRAM.
17. UNIT OR GEOGRAPHIC LOCATION.
18. TRAINING OR SKILL GUARANTEE PLUS UNIT OR GEOGRAPHIC LOCATION.
19. TRAINING OR SKILL GUARANTEE PLUS BUDDY PROGRAM.
20. TRAINING OR SKILL GUARANTEE.
21. OTHER.

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
32. TMOS	Training MOS	2 NUMBERS, 1 LETTER	ACCESSION/ COHORT	81-83	63-65

Military occupational specialty which an individual is entering the service to acquire. See Appendix A for code values.

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
33. TSKID1	Skill Identifier #1	1 LETTER	ACCESSION/ COHORT	84	66
		OR			
34. TSKID2	Skill Identifier #2	1 NUMBER	ACCESSION/ COHORT	85	67
35. PULHES1	PULHES	1 NUMBER	ACCESSION/ COHORT	41	68-69
36. PULHES2	PULHES	1 NUMBER	ACCESSION COHORT	42	70-71

A series of codes giving a description of an individual's physical normalcy. Each letter corresponds to a particular area of health as follows:

P - GENERAL PHYSICAL WELL-BEING
U - UPPER EXTREMITIES
L - LOWER EXTREMITIES
H - HEARING
E - EYES AND VISION
S - PSYCHIATRIC WELL-BEING

Each area is scored from one through four:

1 = COMPLETELY HEALTHY
2 = MINOR DEFECT
3 = MORE SERIOUS DEFECT REQUIRING WAIVER FOR ENTRY
4 = UNWAIVERABLE DEFECT

This field is treated as two separate three digit codes, comprised of the score for areas PUL and areas HES. All fours are converted to fives, and then each of the three digits is multiplied together and the product of each set is stored in its appropriate position. This method means the original scores in individual area can never be retrieved, however, certain ranges can be determined to signify general good health or the presence of a defect.

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
37. WAIVER	Waiver Code	00-17	ACCESSION/ COHORT	55	72-73

CODE VALUES:

0.	NOT APPLICABLE	9.	SOLE SURVIVOR MEMBER
1.	AGE	10.	EDUCATION
2.	NUMBER OF DEPENDENTS	11.	ALIEN
3.	MENTAL QUALIFICATION	12.	SECURITY RISK
4.	MORAL QUALIFICATION	13.	CONSCIENTIOUS OBJECTOR
5.	PREVIOUS DISQUALIFICATION/ SEPARATION	14.	PAY GRADE
6.	LOST TIME	15.	SKILL REQUIREMENTS
7.	PHYSICAL QUALIFICATION (EPTS)	16.	PREDICTOR REQUIREMENTS
8.	PHYSICAL QUALIFICATION	17.	OTHER

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
38. TFORM	**Test Form**	**01-40**	**ACCESSION/ COHORT**	**24**	**74-75**

CODE VALUES:

1.	ECFA1	10.	AFQT 8A,D	19.	BTB6	32.	ASVAB2
2.	ECFA2	11.	AFQT 8B/AQB	20.	BTB7	33.	ASVAB3
3.	ECFA3	12.	AFQT 8C/AQE66	21.	BTB8	34.	ASVAB4
4.	ASVAB	13.	SBTB	22.	BTB-R1	35.	ASVAB5
5.	AFWST/5	14.	SBTB2	23.	ACB73	36.	ASVAB6
6.	AFWST/6	15.	SBTB3	24.	ACT	37.	ASVAB7
7.	AFQT 7A,D	16.	BTB3	25.	AQB	38.	ASVAB8
8.	AFQT 7B	17.	BTB4	26.	AQE66	39.	ASVAB9
9.	AFQT 7C	18.	BTB5	31.	ASVAB1	40.	ASVAB10

39. AFQT	**AFQT Percentile**	**01-99**	**ACCESSION/ COHORT**	**25**	**76-77**
40. AFQTGPS	**AFQT Groups**	**1-8**	**ACCESSION/ COHORT**	**26**	**78**

CODE VALUES:

1.	1-9	2.	10-15	3.	16-20	4.	21-30
5.	31-49	6.	50-64	7.	65-92	8.	93-99

Aggregations of percentile test scores attained by individuals on the Armed Forces Qualification (or equivalent) Test.

41. AFQTORG	**AFQT % Original**	**01-99**	**ACCESSION/ COHORT**	**79**	**79-80**

This field is only valid between **FY76 to FY80** (07/01/75-09/30/80).

42. AFQTGRP	**AFQT Group Orig.**	**1-8**	**ACCESSION/ COHORT**	**80**	**81**

This field is only valid between **FY76 to FY80** (07/01/75-09/30/80).

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
43-59. APTAR01-16	Aptitude Areas 1-16 (Each APTAR is three positions: APTAR01 = 82-84, APTAR02 = 85-87, etc)	01-180	ACCESSION/ COHORT	27-38	82-129

DATA ELEMENTS #60-77 CONTAIN DATA FROM THE OCCURENCE OF A SECOND ACCESSION RECORD.

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
60. HOMEREC2	SEE DATA ELEMENT #4				130-131
61. ENTRYMS2	SEE DATA ELEMENT #13				132-133
62. ENTRYED2	SEE DATA ELEMENT #14				134-135
63. DOEYY2	SEE DATA ELEMENT #19				136-137
64. DOEMM2	SEE DATA ELEMENT #20				138-139
65. DOEDD2	SEE DATA ELEMENT #21				140-141
66. TERMENL2	SEE DATA ELEMENT #22				142-143
67. ENTRYPG2	SEE DATA ELEMENT #23				144-145
68-72. PGMNLF21-25	SEE DATA ELEMENTS #24-28				146-150
73. ENLBON2	SEE DATA ELEMENT #30				151
74. ENLOP2	SEE DATA ELEMENT #31				152-153
75. TMOS2	SEE DATA ELEMENT #32				154-156
76. WAIVER2	SEE DATA ELEMENT #37				157-158
77. AFQT2	SEE DATA ELEMENT #39				159-160
78. CO	Combat Arms	40-155	COMPOSITE	5-7	161-163
79. FA	Field Artillery	40-155	COMPOSITE	8-10	164-166
80. MM	Mechanical Maintenance	40-155	COMPOSITE	11-13	167-169
81. GM	General Maintenance	40-155	COMPOSITE	14-16	170-172
82. CL	Clerical	40-155	COMPOSITE	17-19	173-175
83. GT	General Technical	40-155	COMPOSITE	20-22	176-178
84. EL	Electronics Repair	40-155	COMPOSITE	23-25	179-181
5. SC	Surveillance	40-155	COMPOSITE	26-28	182-184

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
86. ST	Skilled Technical	40-155	COMPOSITE	29-31	185-187
87. OF	Operators & Food Handlers	40-155	COMPOSITE	32-34	188-190

ITEMS #88-122 ARE REPEATED FOR EVERY YEAR BETWEEN 1974-1987 FOR A RECORD LENGTH OF 1269.

ACCES.	2ND ACCESS.	COMP.	1974	1975	1976	1977	1978	1979
1-129	130-160	161-190	191-265	266-340	341-415	416-490	491-565	566-640

1980	1981	1982	1983	1984	1985	1986	1987
641-715	716-790	791-865	866-940	941-1015	1016-1090	1091-1165	1166-1240

MFLAGS	LFLAGS	AFLAG
1241-1254	1255-1268	1269

88. DPOC(YY)	DoD Primary Occupation Code	10-950	MASTER/LOSS	7-8	191-193

The Primary Occupation code indicates the occupation for which the Service member has been trained or the most significant skill held by the individual.

89. DDOC(YY)	DoD Duty Occupation Code	10-950	MASTER/LOSS	9-10	194-196

The Duty Occupation code reflects the occupation in which the Service member is actually working.

90. HYEC(YY)	Education	01-12	MASTER/LOSS	11	197-198

CODE VALUES:

01 - 1-7 YEARS OF ELEMENTARY SCHOOL COMPLETED
02 - 8 YEARS OF ELEMENTARY SCHOOL COMPLETED
03 - 1 YEAR OF HIGH SCHOOL COMPLETED
04 - 2 YEARS OF HIGH SCHOOL COMPLETED
05 - 3 OR 4 YEARS OF HIGH SCHOOL COMPLETED, WITH NO DIPLOMA OR GED
06 - HIGH SCHOOL GRADUATE, DIPLOMA, ATTENDANCE CERTIFICATE, OR GED
07 - 1 YEAR COLLEGE COMPLETED
08 - 2 YEARS OF COLLEGE COMPLETED
09 - 3 OR 4 YEARS OF COLLEGE COMPLETED WITH NO DIPLOMA
10 - COLLEGE GRADUATE (BACHELOR'S)
11 - MASTERS DEGREE
12 - DOCTORATE AND FIRST-PROFESSIONAL DEGREES

91. PYGRD(YY)	Pay Grade	01-14,20-31	MASTER/LOSS	13	199-200

CODE VALUES:

00 - ENLISTED UNKNOWN	11-14 - W01-W04
01-09 - E01-E09	20 - COMMISSIONED OFFICER UNKNOWN
10 - WARRANT OFFICER UNKNOWN	21-31 - 001-011

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
92. MARST(YY)	Marital Status	1-4	MASTER/LOSS	22	201

INFORMATION AFTER 07/01/85 IS CODED AS FOLLOWS:

01 SINGLE
02 MARRIED
03 NO LONGER MARRIED

INFORMATION BEFORE 07/01/85 ARE RECODED AS FOLLOWS:

OLD	NEW
01 SINGLE	04 SINGLE (PRE 07/01/85)
02 MARRIED	02 MARRIED

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
93. NOD(YY)	Number of Dependents	1-9	MASTER/LOSS	23	202

CODE VALUES:

01 - NO DEPENDENTS	06 - 5 DEPENDENTS
02 - 1 DEPENDENT	07 - 6 DEPENDENTS
03 - 2 DEPENDENTS	08 - 7 DEPENDENTS
04 - 3 DEPENDENTS	09 - 8-15 DEPENDENTS
05 - 4 DEPENDENTS	

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
94. MOS(YY)	Primary MOS	2 NUMBERS, 1 LETTER	MASTER/LOSS	34-36	203-205

This data element is the service code for the member's primary occupation. See Appendix A for code values.

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
95. PSKID1(YY)	Skill Identifier #1	1 NUMBER OR	MASTER/LOSS	37	206
96. PSKID2(YY)	Skill Identifier #2	1 LETTER	MASTER/LOSS	38	207
97. DMOS(YY)	Duty MOS	2 NUMBERS, 1 LETTER	MASTER/LOSS	78-80	208-210

Available from 09/78 only. See Appendix A for code values.

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
98. DSKID1(YY)	Skill Identifier #1	1 NUMBER OR	MASTER/LOSS	81	211
99. DSKID2(YY)	Skill Identifier #2	1 LETTER	MASTER/LOSS	82	212
100. CMF(YY)	Career Management Field		MASTER/LOSS	76/77	213-214

CODE VALUES:

11 INFANTRY	63 MECHANICAL MAINTENANCE
12 COMBAT ENGINEEERING	64 TRANSPORTATION
13 FIELD ARTILLERY	67 AVIATION MAINTENANCE
16 AIR DEFENSE ARTILLERY	71 ADMINISTRATION
19 ARMOR	74 AUTOMATIC DATA PROCESSING
23 AIR DEFENSE MISSILE MAINTENANCE	76 SUPPLY AND SERVICE
27 BALLISTIC/LAND COMBAT MISSILE & LIGHT AIR DEFENSE WEAPONS SYSTEMS MAINTENANCE	79 RECRUITMENT & REENLISTMENT
29 COMMUNICATIONS - ELECTRONICS MAINTENANCE	81 TOPOGRAPHIC ENGINEERING
31 COMMUNICATIONS - ELECTRONICS OPERATIONS	84 PUBLIC AFFAIRS AND AUDIOVISUAL
33 EW/INTERCEPT SYSTEMS MAINTENANCE	91 MEDICAL
51 GENERAL ENGINEERING	92 PETROLEUM
54 CHEMICAL	94 FOOD SERVICE
55 AMMUNITION	95 LAW ENFORCEMENT
	96 MILITARY INTELLIGENCE
	97 BAND
	98 EW/CRYPTOLOGIC OPERATIONS

Available from 07/78 only.

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
101. BSDYY(YY)	Base Active Service Date	01-99	MASTER/LOSS	48	215-216
102. BSDMM(YY)	Base Active Service Date	01-12	MASTER/LOSS	49	217-218
103. BSDDD(YY)	Base Active Service Date	01-31	MASTER/LOSS	50	219-220

The constructive date that establishes the beginning of member's creditable active military service. This date is adjusted for breaks in service, AWOL, etc.

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
104. ETYY(YY)	ETS Date	01-99	MASTER/LOSS	51	221-222
105. ETMM(YY)	ETS Date	01-12	MASTER/LOSS	52	223-224

The date at which a member will fulfill his operative (current) active duty contract. Does not include extensions unless the member is currently serving on that extension.

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
106. RKPGYY(YY)	Date of Rank	01-99	MASTER/LOSS	53	225-226
107. RKPGMM(YY)	Date of Rank	01-12	MASTER/LOSS	54	227-228

The date that establishes the relative seniority of an individual among others who possess the same permanent paygrade.

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
108. DOLE(YY)	Date of Latest Reenlistment	01-99	MASTER/LOSS	55	229-230

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
109. DOLE(YY)	Date of Latest Reenlistment	01-12	MASTER/LOSS	56	231-232

Reflects date at which member started his current tour of duty.

110. COMPT(YY)	Component	1-5	MASTER/LOSS	57	233

CODE VALUES:

1 - REGULAR
2 - TEMPORARY
3 - RESERVE
4 - GUARD
5 - FULL-TIME SUPPORT RESERVISTS (FOR SEP 1983 FILES ONLY)

111. SRB(YY)	SRB Multiplier	1-6	MASTER/LOSS	61-62	234-236

Available from 07/85 only.

112. BPDYY(YY)	Pay Entry Base Date	01-99	MASTER/LOSS	65	237-238
113. BPDMM(YY)	Pay Entry Base Date	01-12	MASTER/LOSS	66	239-240
114. BPDDD(YY)	Pay Entry Base Date	01-31	MASTER/LOSS	67	241-242

Items #114-116 are not available for FY1974 loss records

115. UNTID(YY)	Unit Identification	STARTS WITH W ALPHANUMERIC	MASTER/LOSS	69	243-248

Available from 12/74 only.

116. UNTZIP(YY)	Unit Zip Code	00000-99999	MASTER/LOSS	91-95	249-253

Available from 10/79

CODE VALUES:

APO NEW YORK & LOCATION (09)

ITALY - 001-002, 019, 161, 168, 221, 232, 240, 293, 453, 670, 694, 794

GERMANY - 007-009, 012, 021, 025-026, 028-029, 031, 033-036, 039, 045-047 050, 052-054, 056-061, 063, 066-070, 072, 074, 076-082, 086, 090-093,0 95, 098, 102-105, 107-112, 114, 123, 128, 130-132, 137-144, 146, 154, 160, 162, 164-166, 169, 171-173, 175-178, 18 182, 184-186, 189, 211, 213, 215-216, 220, 227, 245, 252, 279, 281, 305, 321-322, 325-326, 330, 333, 351-355, 358-360, 403, 407, 411, 451-452, 454-455, 457-458, 611, 633, 666, 669, 692, 695-696, 701-702, 710-712, 742-743, 751, 757, 801, 807, 860, 87

NETHERLANDS - 011, 145, 159, 188, 292

SAUDI ARABIA - 017, 038, 152, 298, 615-616, 671, 691, 697

GREENLAND - 023, 121

SEYCHELLES - 030

TURKEY - 040, 051, 117-118, 133, 224, 254, 289, 294, 338, 380

ENGLAND - 048-049, 075, 083, 120, 125, 127, 129, 150-151, 179, 193-194, 210, 238, 241, 243, 378, 405, 607, 659, 755

NORWAY - 084-085

BELGIUM - 055, 086, 088, 153, 163, 667

LIBERIA - 155, 228

DENMARK - 170, 870

GREECE - 223, 253, 291, 690, 693

SPAIN - 282-283, 285-286, 401

MOROCCO - 284

AZORES - 406

ZAIRE - 662

FINLAND - 664, 862

SUDAN - 668

ISRAEL - 672

KENYA - 675

EGYPT - 677, 679

PORTUGAL - 678

FRANCE - 777

JORDAN - 892

APO MIAMI AND LOCATION (34)

PANAMA - 001-009, 011
COSTA RICA - 020
NICARAGUA - 021
HONDURAS - 022
EL SALVADOR - 023
GUATEMALA - 024
BRAZIL - 030
PERU - 031
BOLIVIA - 032
CHILE - 033
ARGENTINA - 034
URUGUAY - 035
PARAGUAY - 036
VENEZUELA - 037
COLUMBIA - 038
ECUADOR - 039
PUERTO RICO - 040
DOMINICAN REPUBLIC - 041

APO SAN FRANCISCO AND LOCATION (96)

KOREA - 208, 212-214, 218, 220, 224, 231, 251, 259, 264, 271, 301-302, 324, 335, 358, 366, 371, 397, 455, 460, 461, 483, 488, 524, 570-571

AUSTRALIA - 209, 390, 404-405

JAPAN - 210, 230, 235, 239, 244, 248, 270, 328, 331, 336, 343, 344, 361, 367, 503, 519

PHILLIPINES - 274, 311, 408, 410, 431-432, 434, 528

JOHNSTON ISLAND - 305

INDONESIA - 356

GUAM - 327, 334, 351
THAILAND - 346, 468

WAKE ISLAND - 501
MARSHALL ISLANDS - 555

HAWAII - 556

SEATTLE AND LOCATION (98)

704, 713, 723, 733, 736 ALASKA

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
117. ENSLRV(YY)	Character of Service	1-5	MASTER/LOSS	60	254

CODE VALUES:

1 - HONORABLE
2 - UNDER HONORABLE CONDITIONS - GENERAL
3 - UNDER OTHER THAN HONORABLE CONDITIONS
4 - DISHONORABLE
5 - UNCHARACTERIZED

Information after FY83 (10/01/82) may contain '5' as a valid entry meaning uncharacterized. However, blank or '0' entries prior to this which should mean unknown may have been used to mean uncharacterized as well.

118. RE(YY)	Reenlistment Eligibility	1,1A-1C,10, 2,2A-2C,20, 3,3A-3C,30,4,4A,4R,40 5,6,9A,C,G,K,L,N,O,Q,U,W,X, Y,Z	MASTER/LOSS	63-64	255-256

Reenlistment Eligibility (RE) prior to FY79 (10/01/78) will be recoded as follows:

1. ELIGIBLE
2. INELIGIBLE
5. ELIGIBLE (pre 10/78)
6. INELIGIBLE (pre 10/78)

OTHER CODE VALUES AFTER 10/01/78:

1 or 10 FULLY QUALIFIED FOR IMMEDIATE ENLISTMENT/REENLISTMENT

1A FULLY QUALIFIED FOR REENLISTMENT, BUT INELIGIBLE TO APPLY UNTIL 93 DAYS AFTER DATE OF SEPARATION. APPLICABLE TO THOSE WHO HAVE COMPLETED 6 YEARS OF SERVICE FOR PAY PURPOSES AND WERE NOT REQUIRED TO TAKE ACTION TO MEET SERVICE REMAINING REQUIREMENTS IF SEPARATED ON OR AFTER AUGUST, 1978.

1B FULLY QUALIFIED FOR ENLISTMENT. APPLIES TO PERSONS WHO WERE FULLY QUALIFIED WHEN LAST SEPARATED; HOWEVER, REENLISTMENT WAS NOT AUTHORIZED AT TIME OF SEPARATION UNDER STRENGTH MANAGEMENT PROGRAM IF SEPARATED AFTER JANUARY 31, 1983.

FULLY QUALIFIED FOR ENLISTMENT. APPLIES TO PERSONS WHO HAVE NOT BEEN TESTED TO VERIFY PMOS DURING CURRENT TERM OF SERVICE OR WERE TESTED AND HAD NOT RECEIVED TEST SCORE AT TIME OF SEPARATION IF SEPARATED ON OR BEFORE JANUARY 31, 1983.

1C FULLY QUALIFIED FOR ENLISTMENT PROVIDED OTHERWISE QUALIFIED. APPLIES TO PERSONS WHO DO NOT POSSESS SCORES OF 90 OR HIGHER IN ANY THREE OR MORE APTITUDE AREAS OF THE ARMED SERVICES VOCATIONAL APTITUDE BATTERY (ASVAB), IF TESTED PRIOR TO OCTOBER 1, 1980: OR SCORES OF 85 OR HIGHER IN ANY 3 OR MORE APTITUDE AREAS OF THE ASVAB IF TESTED ON OR AFTER OCTOBER 1, 1980.

2 or 20 FULLY QUALIFIED FOR ENLISTMENT. APPLIES TO 1) PERSONS SEPARATED BEFORE COMPLETING A CONTRACTED PERIOD OF SERVICE WHERE REENLISTMENT IS NOT CONTEMPLATED (INCLUDED SEPARATION TO ACCEPT COMMISSION ETC.) 2) PERSONS SEPARATED FOR PREGNANCY UNDER AR 635-200, CHAPTER 8.

2A FULLY QUALIFIED FOR ENLISTMENT AFTER 93 DAYS HAVE ELAPSED SINCE DATE OF LAST SEPARATION. GRADE DETERMINATION MUST BE MADE. aPPLIES TO PERSONS WITH OVER 6 YEARS OF SERVICE FOR PAY SEPARATED PRIOR TO AUGUST 15, 1978 WHO HAVE INCURRED AN ADDITIONAL SERVICE REQUIREMENT AND WHO DECLINE TO MEET THIS REQUIREMENT THROUGH REENLISTMENT OR EXTENSION.

2B FULLY QUALIFIED FOR ENLISTMENT. APPLIES TO PERSONS WHO WERE FULLY QUALIFIED WHEN LAST SEPARATED: HOWEVER, A VOLUNTARY ENROLLMENT WAS NOT AUTHORIZED AT TIME OF SEPARATION UNDER ENLISTED YEAR GROUP MANAGEMENT PLAN.

2C FULLY QUALIFIED FOR ENLISTMENT AFTER 93 DAYS HAVE ELAPSED SINCE DATE OF SEPARATION. APPLIES TO PERSONS WHO WERE FULLY QUALIFIED WHEN LAST SEPARATED. HOWEVER, REENLISTMENT WAS NOT AUTHORIZED AT TIME OF SEPARATION UNDER REENLISTMENT CONTROL POLICY.

3 or 30 NOT ELIGIBLE FOR ENLISTMENT UNLESS WAIVER CONSIDERATION IS PERMISSABLE AND GRANTED. INCLUDES THOSE SEPARATED UNDER TRAINEE DISCHARGE PROGRAM (TDP) AND EXPEDITIOUS DISCHARGE PROGRAM (EDP).

3A NOT ELIGIBLE FOR ENLISTMENT UNLESS WAIVER IS GRANTED. INELIGIBLE TO APPLY FOR REENLISTMENT UNTIL 93 DAYS AFTER DATE OF SEPARATION. GRADE DETERMINATION MUST BE MADE. APPLICABLE TO THOSE WHO HAVE COMPLETED 4 YEARS OF SERVICE FOR PAY PURPOSES AND WHO REFUSED TO TAKE ACTION TO MEET SERVICE REMAINNG REQUIREMENTS AND WERE SEPARATED ON OR AFTER AUGUST 15, 1978.

NOT ELIGIBLE FOR ENLISTMENT UNLESS WAIVER IS GRANTED.

APPLICABLE TO THOSE WHO HAVE TIME LOST DURING THIER LAST PERIOD OF SERVICE.

3C NOT ELIGIBLE FOR ENLISTMENT UNLESS WAIVER CONSIDERATION IS GRANTED. APPLICABLE TO THOSE WHO DO NOT MEET THE GRADE REQUIREMENT IN BASIC ELIGIBILITY CRITERIA.

4 or 40 NOT ELIGIBLE FOR ENLISTMENT. APPLIES TO PERSONS SEPARATED FROM LAST PERIOD WITH A NONWAIVABLE DISQUALIFICATION. INCLUDES REGULAR AND DISABILITY RETIREMENTS.

4A NOT ELIGIBLE FOR ENLISTMENT. APPLICABLE TO THOSE WHO FAIL TO MEET CITIZENSHIP REQUIREMENT.

4R NOT ELIGIBLE FOR ENLISTMENT. APPLIES TO ENLISTED PERSONNEL RETIRING AFTER 20 OR MORE YEARS ACTIVE FEDERAL SERVICE.

(THE FOLLOWING CODES ARE MEANT TO BE USED WHILE AN INDIVIDUAL IS STILL IN THE SERVICE TO SHOW REASONS HE/SHE MAY BE PROCLUDED FROM VOLUNTARY ENROLLMENT. THEY ARE OCCASIONALLY SEEN ON DROPPED FROM STRENGTH TYPE "LOSS" RECORDS (DESERTIONS, FOR EXAMPLE).

9A LOST TIME. TIME LOST BECAUSE OF ABSENCE WITHOUT LEAVE (AWOL) (INCLUDES CASES WHERE ARTICLE 15 HAS BEEN ADMINISTERED FOR AWOL/LOST TIME)

9C SKILL QUALIFICATION. A NON-QUALIFYING SKILL QUALIFICATION AND LESS THAN 3 SCORES OF 85 ON THE ASVAB/ACB/WACB)

E PHYSICAL READINESS. UNACCEPTABLE PHYSICAL READINESS QUALIFICATIONS

9G GRADE. EXCEEDS TOTAL YEARS ACTIVE FEDERAL SERVICE FOR PAY GRADE.

9K FIELD BAR TO REENLISTMENT. A DENIAL OF REENLISTMENT IMPOSED BELOW DEPARTMENT OF THE ARMY HEADQUARTERS.

9L DEPARTMENT OF THE ARMY BAR TO REENLISTMENT. A DENIAL OF REENLISTMENT IMPOSED BY DEPARTMENT OF THE ARMY PROMOTIONAL BOARD.

9N COURT-MARTIAL CONVICTION. CONVICTED BY ONE OR MORE SUMMARY. SPECIAL OR GENERAL COURTS-MARTIAL.

9O AGE. DOES OR WILL EXCEED MAXIMUM AGE LIMITATIONS.

9Q DECLINATION OF CONTINUED SERVICE STATEMENT. REFUSAL TO TAKE ACTION TO MEET LENGTH OF SERVICE REQUIREMENT.

9U WEAPONS. UNACCEPTABLE WEAPONS QUALIFICATIONS.

9W ARTICLE 15. UNACCEPTABLE ARTICLE 15 QUALIFICATIONS.

OTHER. PROHIBITIONS NOT OTHERWISE IDENTIFIED.

9Y RETIREMENT. APPLICATION FOR RETIREMENT HAS BEEN APPROVED.

9Z WEIGHT. DOES NOT MEET ACCEPTABLE WEIGHT STANDARDS.

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
119. ISC(YY)	Interservice Separation Code	000-008,010 017,022,030-, 033,040-042, 050-052,060-087,090-105	MASTER/LOSS	44	257-259

CODE VALUES:
Information after 10/85 is coded as follows:

000 UNKNOWN OR INVALID

0 RELEASE FROM ACTIVE SERVICE

001 EXPIRATION OF TERM OF SERVICE
002 EARLY RELEASE - INSUFFICIENT RETAINABILITY
003 EARLY RELEASE - TO ATTEND SCHOOL
004 EARLY RELEASE - POLICE DUTY
005 EARLY RELEASE - IN THE NATIONAL INTEREST
006 EARLY RELEASE - SEASONAL EMPLOYMENT
007 EARLY RELEASE - TO TEACH
008 EARLY RELEASE - OTHER (INCLUDING RIF)

1 MEDICAL DISQUALIFICATIONS

010 CONDITIONS EXISTING PRIOR TO SERVICE
011 DISABILITY - SEVERANCE PAY
012 PERMANENT DISABILITY - RETIRED
013 TEMPORARY DISABILITY - RETIRED
014 DISABILITY - NON EPTS - NO SEVERANCE PAY
015 DISABILITY - TITLE 10 RETIREMENT
016 UNQUALIFIED FOR ACTIVE DUTY - OTHER
017 FAILURE TO MEET WEIGHT/BODY FAT STANDARDS

2 DEPENDENCY OR HARDSHIP

022 DEPENDENCY OR HARDSHIP

3 DEATH

030 BATTLE CASUALTY
031 NON-BATTLE - DISEASE
032 NON-BATTLE - OTHER
033 DEATH - CAUSE NOT SPECIFIED

4 ENTRY INTO OFFICER PROGRAMS

040 OFFICER COMMISSIONING PROGRAM

041 WARRANT OFFICER PROGRAM
042 SERVICE ACADEMY

5 RETIREMENT (OTHER THAN MEDICAL)

050 20-30 YEARS OF SERVICE
051 OVER 30 YEARS OF SERVICE
052 OTHER CATEGORIES

6 FAILURE TO MEET MINIMUM BEHAVIORAL OF PERFORMANCE CRITERIA

060 CHARACTER OR BEHAVIOR DISORDER
061 MOTIVATIONAL PROBLEMS (APATHY)
062 ENURESIS
063 INAPTITUDE
064 ALCOHOLISM
065 DISCREDITABLE INCIDENTS - CIVILIAN OR MILITARY
066 SHIRKING
067 DRUGS
068 FINANCIAL IRRESPONSIBILITY
069 LACK OF DEPENDENT SUPPORT
070 UNSANITARY HABITS
071 CIVIL COURT CONVICTION
072 SECURITY
073 COURT MARTIAL
074 FRAUDULENT ENTRY
075 AWOL, DESERTION
076 HOMOSEXUALITY
077 SEXUAL PERVERSION
078 GOOD OF THE SERVICE
079 JUVENILE OFFENDER
080 MISCONDUCT (REASON UNKNOWN)
081 UNFITNESS (REASON UNKNOWN)
082 UNSUITABILITY (REASON UNKNOWN)
083 PATTERN OF MINOR DISCIPLINARY INFRACTIONS
084 COMMISSION OF A SERIOUS OFFENSE
085 FAILURE TO MEET MINIMUM QUALIFICATIONS FOR RETENTION
086 EXPEDITIOUS DISCHARGE
087 TRAINEE DISCHARGE

9 OTHER SEPARATIONS OR DISCHARGES

090 SECRETARIAL AUTHORITY
091 ERRONEOUS ENLISTMENT OR INDUCTION
092 SOLE SURVIVING SON
093 MARRIAGE
094 PREGNANCY
095 MINORITY
096 CONSCIENTIOUS OBJECTOR
097 PARENTHOOD
098 BREACH OF CONTRACT
099 OTHER

TRANSACTIONS

100	IMMEDIATE REENLISTMENT
101	DROPPED FROM STRENGTH FOR DESERTION
102	DROPPED FROM STRENGTH FOR IMPRISONMENT
103	RECORD CORRECTION
104	MISSING IN ACTION OR CAPTURED
105	OTHER DROPPED FROM STRENGTH/THE ROLLS

Information prior to 10/85 will be recoded as follows:

016	UNQUALIFIED FOR ACTIVE DUTY	018	UNQUALIFIED FOR ACTIVE DUTY OR FAILURE TO MEET WEIGHT/BO FAT STANDARDS

VARIABLE NAME	DATA	RANGE	SOURCE FILE	SOURCE POS	NEW POS
120. SPDTYY(YY)	Date of Separation	01-99	MASTER/LOSS	45	260-261
121. SPDTMM(YY)	Date of Separation	01-12	MASTER/LOSS	46	262-263
122. SPDTDD(YY)	Date of Separation	01-31	MASTER/LOSS	47	264-265

MFLAG (YY) Master Flag

A "1" in this position indicates that variables #80-116 for this year contain data from a Master record, and that variables #117-122 may contain data from a transaction record, indicated by ISC codes 100 and above and ISC code of 0.

LFLAG (YY) Loss Flag

A "1" in this position indicates that variables #80-122 for this year contain data from a Loss record and the loss is a "true" loss, indicated by an ISC between 0-99.

AFLAG Second Accession Flag

A "1" in this position indicates that this record contains information from a second accession record.

APPENDIX A: MOS VALUES

00B - DIVER
00D - SPECIAL DUTY ASSIGNMENT
00E - RECRUITER
00J - CLUB MANAGER
00U - EQUAL OPPORTUNITY NCO
00Z - COMMAND SERGEANT MAJOR REPORTING CODES
01H - BIOLOGICAL SCIENCES ASSISTANT
02B - CORNET OR TRUMPET PLAYER
02C - BARITONE OR EUPHONIUM PLAYER
02D - FRENCH HORN PLAYER
02E - TROMBONE PLAYER
02F - TUBA PLAYER
02G - FLUTE OR PICCOLO PLAYER
02H - OBOE PLAYER
02J - CLARINET PLAYER
02K - BASSOON PLAYER
02L - SAXOPHONE PLAYER
02M - PERCUSSION PLAYER
02N - PIANO PLAYER
02P - BRASS GROUP LEADER
02Q - WOODWIND PLAYER
02R - PERCUSSION GROUP LEADER
02S - SPECIAL BAND PERSON
02T - GUITAR PLAYER
02Z - ENLISTED BAND LEADER
03C - PHYSICAL ACTIVITIES SPECIALIST
05B - RADIO OPERATOR
05D - EW/SIGINT EMITTER IDENTIFIER/ LOCATOR
05G - SIGSEC ANALYST
05H - EW/SIGINT MORSE INTERCEPTOR
05K - EW/SIGINT NONMORSE INTERCEPTOR
06C - RADIO TELETYPE OPERATOR
09D - COLLEGE TRAINEE
09R - RESERVE FORCES RPTG CODE
09S - COMM OFFICER CANDIDATE
09T - ARNG STAT OCS CANDIDATE
09W - WO CANDIDATE
11B - INFANTRY MAN
11C - INDIRECT FIRE INFANTRYMAN
11H - HEAVY ANTIARMOR WEAPONS INFANTRYMAN
11M - FIGHTING VEHICLE INFANTRYMAN
12B - COMBAT ENGINEER
12C - BRIDGE CREWMAN
12E - ATOMIC DEMOLITION MUNITIONS SPECIALIST
12F - ENGINEER TRACKED VEHICLE CREWMAN
12Z - COMBAT ENGINEERING SENIOR SERGEANT
13B - CANNON CREWMAN (131 - FA CANNON/MISSILE SUBFIELD)
13B - FA FIREFINDER RADAR OPERATOR (132 - FA TARGET ACQUISITION OPERATIONS SUBFIELD)
13C - TACFIRE OPERATIONS SPECIALIST
13E - CANNON FIRE DIRECTION SPECIALIS
13F - FIRE SUPPORT SPECIALIST
13M - MULTIPLE LAUNCH ROCKET SYSTEM CREWMEMBER
13W - FA TARGET ACQUISITION SENIOR SERGEANT
13Y - CANNON MISSILE SENIOR SERGEANT
13Z - FIELD ARTILLERY SENIOR SERGEANT
15D - LANCE CREWMEMBER MLRS SERGEANT
15E - PERSHING MISSILE CREW MEMBER
15J - MLRS/LANCE OPERATION/FIRE DIRECTION SPECIALIST
16B - HERCULES MISSILE CREW MEMBER
16C - HERCULES FIRE CONTROL CREW MEMBER
16D - HAWK MISSILE CREW MEMBER
16E - HAWK FIRE CONTROL CREW MEMBER
16F - LIGHT ADA CREWMAN (RESERVE FORCES)
16G - ROLAND CREWMEMBER ASSISTANT
16H - ADA OPERATIONS AND INTELLIGENCE ASSISTANT
16J - DEFENSE ACQUISITION RADAR OPERATOR
16P - ADA SHORT RANGE MISSILE CREWMAN
16R - ADA SHORT RANGE GUNNERY CREWMAN
16S - MANPADS (MAN PORTABLE AIR DEFENSE SYSTEM) CREWMAN
16T - PATRIOT MISSILE CREWMEMBER
16Z - ADA SENIOR SERGEANT
17B - FA RADAR CREW MEMBER
17C - FA TARGET ACQUISITION SPECIALIS
17K - GROUND SURVEILLANCE RADAR CREWMAN
17L - AERIAL SENSOR SPECIALIST (OV-IBC) (RESERVE FORCES)
17M - REMOTE SENSOR SPECIALIST
19D - CAVALRY SCOUT
19E - M48-M60 ARMOR CREWMAN
19K - MI ABRAMS ARMOR CREWMAN
19Z - ARMOR SENIOR SERGEANT

21G - PERSHING ELECTRONIC MATERIAL SPECIALIST
21L - PERSHING ELECTRONICS REPAIR
22L - NIKE TEST EQUIPMENT REPAIRER
22N - NIKE-HERCULES MISSILE LAUNCHER REPAIRER
23N - NIKE TRACK RADAR REPAIRER
23U - NIKE HIGH POWER RADAR SIMULATOR REPAIRER
23W - NIKE MAINTENANCE CHIEF
24C - IH FIRING SECTION MECHANIC
24F - IH FIRE CONTROL MECHANIC
24G - IH INFORMATION COORDINATOR CENTRAL MECHANIC
24H - IH FIRE CONTROL REPAIRER
24J - IH PULSE RADAR REPAIRER
24K - IH CW RADAR REPAIRER
24L - IH LAUNCHER & MECHANICAL SYSTEMS REPAIRER
24M - VULCAN SYSTEM MECHANIC
24N - CHAPARRAL SYSTEM MECHANIC
24P - DEFENSE ACQUISITION RADAR MECHANIC
24Q - NIKE HERCULES FIRE CONTROL MECHANIC
24R - IMPROVED HAWK MASTER MECHANIC
24S - ROLAND MECHANIC 7
24T - PATRIOT MISSILE MECHANIC
24U - HERCULES ELECTRONICS MECHANIC
24V - IH MAINTENANCE CHIEF
25C - COMBAT AREA SURVEILLANCE RADAR REPAIRER
25J - OPERATIONS CENTRAL REPAIRER
25L - AN/TSQ-78 ADA COMMAND CONTROL SYSTEM OPERATOR/REPAIRER
25Q - TACTICAL MICROWAVE SATELLITE SYSTEMS OPERATOR
25R - STRATEGIC MICROWAVE SYSTEMS OPERATOR
26B - WEAPONS SUPPORT RADAR REPAIRER
26F - AERIAL PHOTOACTIVE SENSOR REPAIRER
26H - AIR DEFENSE RADAR REPAIRER
26K - AERIAL ELECTRONIC WARNING DEFENSE EQUIPMENT REPAIRER
26L - TACTICAL MICROWAVE SYSTEMS REPAIRER
26M - AERIAL SURVEILLANCE RADAR REPAIRER (RESERVE FORCES)
26N - AERIAL SURVEILLANCE INFRARED REPAIRER (RESERVE FORCES)
26T - RADIO/TV SYSTEMS SPECIALIST
26V - STRATEGIC MICROWAVE SYSTEMS REPAIRER
26Y - SATELLITE COMMUNICATIONS EQUIPMENT REPAIRER
27B - LCSS TEST SPECIALIST/LANCE REPAIRER
27C - ROLAND REPAIRER 7
27D - ROLAND FMTS REPAIRER
27E - TOW/DRAGON REPAIRER
27F - VULCAN REPAIRER
27G - CHAPARRAL/REDEYE REPAIRER
27H - SHILLELAGH REPAIRER
27N - FORWARD AREA ALERTING RADAR REPAIRER
27Z - BALLISTIC/LC/LAD SYSTEMS MAINTENANCE CHIEF
31E - FIELD RADIO REPAIRER
31J - TELETYPEWRITER REPAIRER
31M - MULTICHANNEL COMMUNICATIONS EQUIPMENT OPERATOR
31N - TACTICAL CIRCUIT CONTROLLER
31S - FIELD GENERAL COMSEC REPAIRER
31T - FIELD SYSTEMS COMSEC REPAIRER
31V - TACTICAL COMMUNICATIONS SYSTEMS/OPERATOR MECHANIC
31Z - C-E OPERATIONS CHIEF
32D - STATIONS TECHNICAL CONTROLLER
32F - FIXED CLIPHONY REPAIRER
32G - FIXED CRYPTOGRAPHIC EQUIPMENT REPAIRER
32H - FIXED STATION RADIO REPAIRER
32Z - C-E MAINTENANCE CHIEF
33S - EW/INTERCEPT SYSTEMS REPAIRER
34B - PUNCHCARD MACHINE REPAIRER
34C - DAS 3 COMPUTER REPAIRER
34E - NCR 500 COMPUTER REPAIRER
34F - DSTE REPAIRER
34H - ADMSE REPAIRER
34J - UNIVAC 1004/1005 DCT 9000 SYSTEM REPAIRER
34K - IBM 360 REPAIRER
34Y - FA COMPUTER REPAIRER
34Z - ADP MAINTENANCE SUPERVISOR
35B - ELECTRONIC INSTRUMENT REPAIRER
35C - AUTOMATIC TEST EQUIPMENT REPAIRER
35E - SPECIAL ELECTRICAL DEVICES REPAIRER
35F - NUCLEAR WEAPONS ELECTRONICS SPECIALIST
35G - BIOMEDICAL EQUIPMENT SPECIALIST BASIC
35H - CALIBRATION SPECIALIST
35K - AVIONIC MECHANIC
35L - ELECTRONIC SWITCHING SYSTEMS REPAIRER

35L - AVIONIC COMMUNICATIONS EQUIPMENT REPAIRER
35M - AVIONIC NAVIGATION AND FLIGHT CONTROL EQUIPMENT REPAIRER
35P - AVIONIC EQUIPMENT MAINTENANCE SUPERVISOR
35R - AVIONIC SPECIAL EQUIPMENT REPAIRER
35U - BIOMEDICAL EQUIPMENT SPECIALIST ADVANCED
36C - WIRE SYSTEMS INSTALLER/ OPERATOR
36D - ANTENNA INSTALLER SPECIALIST
36E - CABLE SPLICER
36H - DIAL/MANUAL CENTRAL OFFICE REPAIRER
36K - TACTICAL WIRE OPERATIONS SPECIALIST
36L - ELECTRONIC SWITCHING SYSTEMS REPAIRER
41B - TOPOGRAPHIC INSTRUMENT REPAIR SPECIALIST
41C - FIRE CONTROL INSTRUMENT REPAIRER
41E - AUDIOVISUAL EQUIPMENT REPAIRER
41G - AERIAL SURVEILLANCE PHOTOGRAPHIC EQUIPMENT REPAIRER (RESERVE FORCES)
1J - OFFICE MACHINE REPAIRER
42C - ORTHOPTIC SPECIALIST
42D - DENTAL LABORATORY SPECIALIST
42E - OPTICAL LABORATORY SPECIALIST
43E - PARACHUTE RIGGER
43M - FABRIC REPAIR SPECIALIST
44B - METAL WORKER
44E - MACHINIST
45B - SMALL ARMS REPAIRER
45D - FIELD ARTILLERY TURRET MECHANIC
45E - MI ABRAMS TANK TURRET MECHANIC
45G - FC SYSTEMS REPAIRER
45K - TANK TURRET REPAIRER
45L - ARTILLERY REPAIRER
45N - M60A1/A3 TANK TURRET MECHANIC
45T - ITV/IFV/CFV TURRET MECHANIC
45Z - ARMAMENT/FIRE CONTROL MAINTENANCE SUPERVISOR
46N - PERSHING ELECTRICAL MECHANICAL REPAIRER
51B - CARPENTRY & MASONRY SPECIALIST
51C - STRUCTURES SPECIALIST
51G - MATERIALS QUALITY SPECIALIST
51H - CONSTRUCTION SUPERVISOR
51K - PLUMBER
M - FIREFIGHTER
51N - WATER TREATMENT
51R - INTERIOR ELECTRICIAN
51T - TECHNICAL ENGINEERING SPECIALIST
51Z - GENERAL ENGINEERING SUPERVISOR
52C - UTILITIES EQUIPMENT REPAIRER
52D - POWER GENERATION EQUIPMENT REPAIRER
52E - PRIME POWER PRODUCTION SPECIALIST
52G - TRANSMISSION AND DISTRIBUTION SPECIALIST
54C - SMOKE OPERATIONS SPECIALIST
54E - NBC SPECIALIST
54Z - CHEMICAL SENIOR SERGEANT
55B - AMMUNITION SPECIALIST
55D - EXPLOSIVE ORDINANCE DISPOSAL SPECIALIST
55G - NUCLEAR WEAPONS MAINTENANCE SPECIALIST
55X - AMMUNITION INSPECTOR
55Z - AMMUNITION SUPERVISOR
57E - LAUNDRY AND BATH SPECIALIST
57F - GRAVES REGISTRATION SPECIALIST
57H - TERMINAL OPERATIONS COORDINATOR
61B - WATERCRAFT OPERATOR
61C - WATERCRAFT ENGINEER
61F - MARINE HULL REPAIRER
61Z - MARINE SENIOR SERGEANT
62B - CONSTRUCTION EQUIPMENT REPAIRER
62E - HEAVY CONSTRUCTION EQUIPMENT OPERATOR
62T - ITV/IFV/CFV SYSTEM MECHANIC
63B - LIGHT WHEEL VEHICLE/POWER GENERATION MECHANIC
63D - SELF-PROPELLED FIELD ARTILLERY SYSTEM MECHANIC
63E - MI ABRAMS TANK SYSTEMS MECHANIC
63G - FUEL & ELECTRICAL SYSTEMS REPAIRER
63H - TRACK VEHICLE REPAIRER
63J - QUARTERMASTER & CHEMICAL EQUIPMENT REPAIRER
63N - M60A1 TANK SYSTEM MECHANIC
63W - WHEEL VEHICLE REPAIRER
63Y - TRACK VEHICLE MECHANIC
63Z - MECHANICAL MAINTENANCE SUPERVISOR
64C - MOTOR TRANSPORT OPERATOR
64Z - TRANSPORTATION SENIOR SERGEANT
65B - LOCOMOTIVE REPAIRER
65D - RAILWAY CAR REPAIRER

65E - AIRBRAKE REPAIRER
65F - LOCOMOTIVE ELECTRICIAN
65G - RAILWAY SECTION REPAIRER
65H - LOCOMOTIVE OPERATOR
65J - TRAIN CREW MEMBER
65K - RAILWAY MOVEMENT COORDINATOR
65Z - RAILWAY SENIOR SERGEANT
67G - UTILITY/CARGO AIRPLANE REPAIRER
67H - OBSERVATION AIRPLANE REPAIRER
67N - UTILITY HELICOPTER REPAIRER
67T - TACTICAL TRANSPORT HELICOPTER REPAIRER
67U - MEDIUM HELICOPTER REPAIRER
67V - OBSERVATION/SCOUT HELICOPTER REPAIRER
67W - AIRCRAFT QUALITY CONTROL SUPERVISOR
67X - HEAVY LIFT HELICOPTER REPAIRER
67Y - ATTACK HELICOPTER REPAIRER
67Z - AIRCRAFT MAINTENANCE SENIOR SERGEANT
68B - AIRCRAFT POWER PLANT REPAIRER
68D - AIRCRAFT POWER TRAIN REPAIRER
68F - AIRCRAFT ELECTRICIAN
68G - AIRCRAFT STRUCTURAL REPAIRER
68H - AIRCRAFT PNEUDRALICS REPAIRER
68J - AIRCRAFT FIRE CONTROL REPAIRER
68K - AIRCRAFT COMPONENT REPAIR SUPERVISOR
68M - AIRCRAFT WEAPON SYSTEMS REPAIRER
71C - STENOGRAPHER
71D - LEGAL CLERK
71E - COURT REPORTER
71G - PATIENT ADMINISTRATION SPECIALIST
71L - ADMINISTRATIVE SPECIALIST
71M - CHAPEL ACTIVITIES SPECIALIST
71N - TRAFFIC MANAGEMENT COORDINATOR
71P - FLIGHT OPERATIONS COORDINATOR
71Q - JOURNALIST
71R - BROADCAST JOURNALIST
72E - COMBAT TELECOMMUNICATIONS CENTER OPERATOR
72G - DATA COMMUNICATIONS SWITCHING CENTER SPECIALIST
72H - CENTRAL OFFICE OPERATIONS OPERATOR
73C - FINANCE SPECIALIST
73D - ACCOUNTING SPECIALIST
73Z - FINANCE SENIOR SERGEANT
74B - CARD AND TAPE WRITER (RESERVE FORCES)
D - COMPUTER/MACHINE OPERATOR
74F - PROGRAMER/ANALYST
74Z - DATA PROCESSING NCO
75B - PERSONNEL ADMINSTRATION SPECIALIST
75C - PERSONNEL MANAGEMENT SPECIALIST
75D - PERSONNEL RECORDS SPECIALIST
75E - PERSONNEL ACTIONS SPECIALIST
75F - PERSONNEL INFORMATION SYSTEM MANAGEMENT SPECIALIST
75Z - PERSONNEL SERGEANT
76C - EQUIPMENT RECORDS & PARTS SPECIALIST
76J - MEDICAL SUPPLY SPECIALIST
76P - MATERIAL CONTROL & ACCOUNTING SPECIALIST
76V - MATERIAL STORAGE & HANDLING SPECIALIST
76W - PETROLEUM SUPPLY SPECIALIST
76X - SUBSISTENCE SUPPLY SPECIALIST
76Y - UNIT SUPPLY SPECIALIST
76Z - SENIOR SUPPLY SERGEANT
79D - REENLISTMENT NCO
81B - TECHNICAL DRAFTING SPECIALIST
81C - CARTOGRAPHER
81E - ILLUSTRATOR
81Z - TOPOGRAPHIC ENGINEERING SUPERVISOR
82B - CONSTRUCTION SURVEYOR
82C - FA SURVEYOR
82D - TOPOGRAPHIC SURVEYOR
83E - PHOTO AND LAYOUT SPECIALIST
83F - PHOTOLITHOGRAPHER
84B - STILL PHOTO SPECIALIST
84C - MOPIC SPECIALIST
84F - AUDIO/TV SPECIALIST
84T - TV/RADIO BROADCAST OPERATIONS CHIEF
84Z - PUBLIC AFFAIRS/AUDIOVISUAL CHIEF
91B - MEDICAL SPECIALIST
91C - PATIENT CARE SPECIALIST
91D - OPERATING ROOM SPECIALIST
91E - DENTAL SPECIALIST
91F - PSYCHIATRIC SPECIALIST
91G - BEHAVIORAL SCIENCE SPECIALIST
91H - ORTHOPEDIC SPECIALIST
91J - PHYSICAL THERAPY SPECIALIST
91L - OCCUPATIONAL THERAPY SPECIALIST
91N - CARDIAC SPECIALIST
91P - X-RAY SPECIALIST
91Q - PHARMACY SPECIALIST
91R - VETERINARY SPECIALIST

91S - ENVIRONMENTAL HEALTH
      SPECIALIST
91T - ANIMAL CARE SPECIALIST
91U - ENT SPECIALIST
91V - RESPIRATORY SPECIALIST
91W - NUCLEAR MEDICINE SPECIALIST
91Y - EYE SPECIALIST
92 - CYTOLOGY SPECIALIST
92B - MEDICAL LABORATORY SPECIALIST
92C - PETROLEUM LABORATORY
      SPECIALIST
92D - CHEMICAL LABORATORY SPECIALIST
93E - METEROLOGICAL OBSERVER
93F - FA METEROLOGICAL CREW MEMBER
93H - ATC TOWER OPERATOR
93J - ATC RADAR CONTROLLER
94B - FOOD SERVICE SPECIALIST
94F - HOSPITAL FOOD SERVICE
      SPECIALIST
95B - MILITARY POLICE
95C - CORRECTIONAL SPECIALIST
95D - SPECIAL AGENT
96B - INTELLIGENCE ANALYST
96C - INTERROGATOR
96D - IMAGE INTERPRETER
96H - AERIAL SENSOR SPECIALIST
      (OV-ID)
96Z - INTELLIGENCE SENIOR SERGEANT
97B - COUNTERINTELLIGENCE AGENT
7C - AREA INTELLIGENCE SPECIALIST
98C - EW/SIGINT ANALYST
98G - EW/SIGINT VOICE INTERCEPTOR
98J - EW/SIGINT NONCOMM INTERCEPTOR
98Z - EW/SIGINT CHIEF

APPENDIX C

A CIVILIAN RESEARCHER'S GUIDE TO ARMY RECRUITMENT AND RETENTION OF ENLISTED PERSONNEL 1987

Frank P. Stafford
University of Michigan

To analyze the economic aspects of recruitment and retention of Army enlisted personnel it is necessary to have some institutional understanding of how people are now brought in and retained as well as some of the differences between the current system and the system structure a few years ago, notably before 1981. Before then pay was lower, and less effort was devoted to selecting highly qualified recruits. The range of available inducements to reenlist and pursue various military occupational specialties (MOS's) was very different prior to 1981, and unless one is prepared to believe that his model represents very "deep" parameters of the military career choice, it is unlikely that behavioral choice models of the pre-1981 era could apply easily or without great caution to the post-1981 era. A possible research goal could be to test for structural differences in models representing these two eras.

As will be seen below recruitment and reenlistment choices are tied into a set of qualifications of the individual and conditions of employment which then imply a compensation package. This means that efforts by a certain band of social scientists known as economists to estimate pay and retention elasticities must include a modelling of the self-selection and offer process of the original enlistment point or absurd results are likely to arise. To illustrate, reenlistment bonuses are offered in shortage MOS's only to those passing certain thresholds on the skill qualification test (SQT) and certain thresholds of the General Technical (GT) which is a linear combination of subsets of the Armed Forces Vocational Aptitude Battery (ASVAB) administered to new recruits to measure their general mental abilities. Without knowledge of the change in criteria for offering such reenlistment bonuses one could erroneously conclude that medium to low skill persons appear less responsive to reenlistment bonuses than skilled people, unless one realized that many of the less skilled in the sample were simply ineligible for bonuses.[1]

I.Pay and Occupations- an Overview

The structure of the Army pay system can be seen as a blend of a slowly changing program inherited in large measure from pre-AVF (all volunteer force) days,[2] combined with an overlay of incentives to deal with heterogeneity of the force in terms of skill acquisition and external or civilian labor market opportunities. As of fiscal year 1987 the budget for compensation was around $24 billion, of which about $5 billion went to pensions. Only about ?? $60 million is spent on reenlistment bonuses (down from about $150 million a few years ago) and another $95 million or less currently represents the Army contribution to the Army College Fund (ACF) (on an accrual basis) under the new GI Bill.

The basic pay by pay grade and years of service is set out in a table entitled "Monthly Basic Pay" (See attached Appendix A for the 1982-83 year.) Note that compensation can include a Basic Allowance for Quarters (BAQ) and a Variable Housing Allowance (VHA).[3] Compensation also includes "special pays" for hazardous duty, such as flight or sea pay. These are less important for the Army.

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1. Another issue for analysis is the availabilty of information on individuals and the policies which may shape their choices. In the example above, the magnitude of bonuses is not kept in a central file and the changing bonus policy can be obtained only through studying issues of <u>Army Times</u>.

2. The AVF dates back to January, 1973

3. Regular Military Compensation (RMC) includes basic pay and BAQ + VHA + basic allowance for subsisitence (BAS) + tax advantages of BAQ, BAS and VHA.

The Basic Pay Table is applicable to all services and therefore reflects a variety of compromises. Many of its features have been inherited from pre-AVF days. It is difficult to change, in part because changes require agreement of all four services. Bonuses for reenlistment and eligibility for reenlistment are more flexible, but can operate only within the contraints of the external review of Congress, which tends to limit the extent of flexibility (in part by limiting the share of the budget available for such bonuses). The Basic Pay Table can be used by enlisted personnel to project most of (generally over 75%) their basic earnings for a continued longer-term career in the military.

The Army has a wide range of skill groups. These are presented in Appendix B. There are 366 MOS's in the Army. These group into 35 Career Management Fields (CMF's). At a still more aggregate level there are three large groupings: Combat Arms (infantry,artillery and so on), Combat Support (military police, signal corps, and so on) and Combat Service Support (mechanics, technicians, administrative specialties). The MOS specialities differ in two obvious dimensions-- the extent to which they have skill requirements and the extent to which the activity is Army-specific. Electronic technicians have substantial skills and these skills are valued in the external market. Incentives to acquire these skills include the post-Army earnings. On the other hand specialists such as those in dealing with attacks from biological warfare also acquire skills, but skills which which are largely Army-specific. To motivate a decision to commit to such an MOS we would expect that there has to be larger within-Army payoffs.

Entry into the Army involves extensive prescreening of the applicant including the ASVAB, a battery of aptitude and acheivement tests. Based on these test results and high school graduation status, there is a menu of choices offered the applicant with more qualified applicants given much wider choices. It is important to note that these choice sets shape any subsequent reenlistment choices to a very great extent. This implies that it may be fruitful to model the enlistment _and_ reenlistment decisions as influenced by many of the same factors. We will see more of this as we go through more detail on the nature of the institutions in the discussion below.

II. Enlistment

Potential recruits are tested and required to provide other information about themselves. Based on this information a smaller or larger number of career choices are offered the applicant. The applicant, if qualified, is offered both training and work within his chosen MOS if he doesn't wash out during the training period.

Those who enlist and acquire an MOS skill are required to keep themselves qualified by scoring sufficiently high on a Skill Qualification Test (SQT). This MOS-specific test is now given each year (though there are some MOS's which do not have tests). In this way a commitment to a given MOS at the point of enlistment is to some extent a commitment to both pass the entry training in the MOS and to maintain skills in the future.

Most of the current enlistees sign up under the Delayed Entry Program (DEP), an "inventory" of recruits used to even out the flow into the MOS training courses. There is a one month minimum to the delay and a current average delay of 6 months. During this delay period one can drop out and not follow through on the preliminary decision without enforcement of the enlistment contract. The DEP seems to offer a type of simple screening device (analagous to an engagement for marriage?) in that longer duration DEP status is related to lower attrition rates. As part of the initial entry into the

Army the individual may be promised post-service educational benefits. In this way a decision to sign up can simultaneously represent a decision to leave at some (fairly well-specified) future date.

Entry into the Army begins with a short period of fixed duration (8 weeks long) in which basic training is completed. After this a period of variable length (ranging from 3 to 52) weeks is spent in Advanced Individual Training (AIT) acquiring MOS-specific skills. There is a trainee discharge which can occur within the first 6 months and simply allows a (graceful?) parting of the ways for an enlistee who turns out to be a poor match with the Army. The serviceman's record will include indicators of success in completing this training and it is therefore knowable by future external employers.

III. Educational Benefits

Before 1977 educational benefits were provided under the G.I. Bill program, which was introduced after WWII. Just serving for 180 days and receiving a general discharge entitled a person to benefits valued at $12,000 in 1976 dollars. From January, 1977 to July, 1985 the program which operated was the Veteran's Educational Assistance Program (VEAP). Under this program an enlistee could agree to put in up to $2700 in payments over the enlistment period (at a zero interest rate) but this amount was refundable if participation was not elected. Upon completion of an the enlistment term the Army would match by providing up to $5400, yielding a total fund of $8100 which could be spent on an approved program at a monthly rate of $240. Many enlistees signed up for this program, but there were also many dropouts. [4]

? I DON'T THINK THIS IS RIGHT

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4. VEAP participation infomation is not on the Enlisted Master File (EMF), but is on Joint Uniform Military Pat System (JUMP) files and can be merged with the EMF.

SGT TAMMENGA YOUNG

Under VEAP, the decision to participate and pay in could take place at any time during an enlistment period. VEAP "kickers" - additional service contributions to educational expenses - were available in certain MOS's starting in FY1982. These kickers plus VEAP represent the Army College Fund (ACF). 1980

The "New G.I. Bill", which began in October of 1985 has two components: a basic entitlement which is built up during AIT and ACF kickers. ACF benefits were often combined with a cash enlistment bonus (EB), and data on ACF and EB incentives for the 48 Military Science MOS's for FY1981-1984 are presented in Appendix C.[5] Currently, EB's and ACF cannot bew offered together.

To participate in the basic educational entitlement one has to put in $1200 dollars in monthly payments of $100. The amount built up is forfeited if the $1200 total is not attained or if it is not used. If the $1200 is put in by the enlistee the Army will provide matching funds so that a maximum of $10800 is available. The ACF component is available to those scoring in the upper half of the AFQT and enlist in specified MOS's. Currently, there are approximately 80 eligible MOS's and these usually include combat-related MOS's. It is worth noting that basic entitlement and ACF are mutually committed to by the Army and the enlistee at the initial enlistment. That is, these are decisions which are part of a duration of career decision by the enlistee. Currently the total budget for the "New G.I. Bill" is less than $100 million per year.

RET ?

I DO NOT KNOW WHAT COST OF GI BILL IS

IV. Training and Other Aspects of First Term Army Life

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5. These data are from a paper entitled "A Prototype Model for Allocating Army Enlistment Incentives: A Feasibility Phase," by Richard C. Morey and C.A. Knox Lovell, U.S. Army Recruiting Command, 1986

Army life begins with basic training which starts at the time agreed to in the Delayed Entry Program (DEP). Basic training lasts 8 weeks and is followed by a period of up to 18 months in training for MOS skills.[6] Currently the Army is able to recruit high quality people and virtually all have a high school degree (95 percent) and most (65-70 percent) are in mental categories I-IIIA, although about 5-7 percent are in category IV.[7]

After completing training, assignments to units are made. Quality of life is typically regarded as inversely related to the amount of field duty which a unit is assigned. In field assignments one lives under conditions which include tent living, field cooking, no showers, long days and nature's temperature, humidity and other atmospheric conditions. Field conditions are not welcomed by most people, particularly if the have established a regular family life. Those in Combat Arms spend much more time per year living under field conditions as do those in Combat Support and Combat Service Support. These known differences in Army life presumably shape the enlistment decision as well as the reenlistment decision, and suggest that there may be major differences across MOS's in the level of non-pecuniary benefits or costs.

V. Reenlistment

Although a serviceman can be barred from future service in the Army at any time, much of the related review for barring occurs as the end of a term of service years. At this time there is a rising probability of actions taken by both the commanding officer and the enlisted person. If the commanding

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6. The longest training period is for language specialties and to receive this training one has to sign up for a minimum of four years.

7. The mental categories are defined by percentile scores of the AFQT. I is 93-99, II is 65-92, IIIA is 50-64, IIIB is 35-49, IV is 11-34 and V is 10 or less.

officer is unhappy with the serviceman's record he can begin an effort to bar reenlistment 270 days before the end of the term. (More on this below under "Bars to Reenlistment".) At 190 days prior to the expiration of term the enlisted person can reenlist. For first term reenlistees there are quite a few choices but for subsequent reenlistment points the range of options narrows sharply. At first term reenlistment one can "reup" with changes in unit, location, and MOS. A change in MOS will imply a retraining commitment and the duration of term will be set to recoup the additional training investment by the Army. Just as for initial enlistment there is a need to qualify for the retraining.

Under a "test" program no longer in existence, eligibility for reenlistment was partly shaped by one's score under a quality points program. This was started in 1982-83 and had the impact of restricting the reenlistment of some of the weaker recruits from the late 1970's. Quality points were awarded for education and GT score and could be used as the basis for early promotion. For researchers there is also the question of data availability. Is there good information on quality points and the quality point cutoffs for reenlistment?

Because of the rather rigid pay scale (see I above), bonuses are one of the elements used to encourage reenlistment in shortage MOS's, to encourage retraining into shortage MOS's and, through their absence, discourage movement into surplus MOS's.[8] In general no reenlistment bonus is available if a MOS

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8. For civilian-researchers we should note that reenlistment bonuses and options to retrain differ through time in ways which are not easy to document. It appears that only through careful study of issues of Army Times can one develop a time series of Army reenlistment bonus policy at the MOS level. A possible alternative is to use DMDC data in a bonus file. Also, the Army may fund an effort to record bonus data from its files.

switch is involved, and switching is allowed only from surplus to shortage MOS's. The bonus (B) is set according to the relation B = multiplier x incremental years in service x current monthly pay. The bonus can influence both the decision to reenlist and the duration of reenlistment. At least three payment methods have been used for bonuses under the AVF: lump-sum up front, annual installments, and 50 percent up front and 50 percent in annual installments (the current payment schedule).[9]

Early reenlistment can be achieved for those with stronger records. One reason for early reenlistment is to realize better benefits. Given the share of Army personnel in Europe, an important case would be orders for a permanent change of station (PCS) which could arrive partway through the first term. Suppose the assignment involved 18 months in Europe. If the remaining time in the term were insufficient, then there are incentives to reenlist to obtain family allowances, which require a three year tour of duty. This reenlistment could occur without a bonus but in fact there was a "hidden" bonus in the form of a family allowance which partly shaped the decision.

An additional note on terminology. Zones A, B, and C refer to reenlistment periods, generally conforming to first, second and third term decisions, and "career" is a term applied to anyone with 36 or more months of service.[10]

VI. Bars to Reenlistment

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9. In the Navy one of the options to enlisting or exiting is to extend for a period of up to a year or more. In the Army extensions are short, perhaps a month or two. For the sake of representing decisions, it probably makes sense to consider an extension of a month or two followed by reenlistment as simply being a reenlistment.

10. In the other services "career" refers to anyone with 48 or more months of service.

In modeling reenlistment it is important to think about bars or restrictions by the Army, to the reenlistment of particular individuals. In a simple approach these might be considered exogenous, but as we will see virtually all of the bars are the consequence of factors which can be influenced by the serviceman's behavior. All of the reenlistment bars are determined by administrative rules and these rules are subject to change through time. The fact that they change can represent a modelling opportunity while not realizing that they do can represent an invitation for a research disaster. The bars fall into three categories:

1. Performance. This requires the overt action of the company officer to "build a record" against reenlistment. This bar can be appealed. One research question: do company officers act more leniently when they see shortages looming, and do enlistees "behave themselves" when available vacancies appear limited?

2. Courtmartialed. This is presumed evidence of a inappropriateness for Army service and leads to performance bar.

3. Automatic bars are imposed as the result of other personnel actions. Examples include overweight. Each person has a weight limit based on height and weight (and for body builders a possible supplementary submersion test).

4. Skill qualification test score (SQT). This is a recent development. Currently one is barred for failing the SQT twice.

5. Self-imposed bar. A major case would be refusal of prior geographic assignment.

6. GT under 90. GT is a linear combination of subsets of the AFQT. This bar may not necessarily show up as a bar in the individual"s record.

VII. Promotions

Promotions are controlled by the company commander up to the level of E4. At enlistment people are started at E1 and after 6 months are automatically promoted to E2. E3 is also close to being automatic at the end of one year for those who are not discharged. The E4 promotion occurs between year 1.0 and 3.0 and overlaps in time with promotion to E5 which can occur anywhere between year 2.0 and year 15.0.

In making E4 promotions the commander is given a roster of eligibles based on time in service and time in grade. The commander can promote all those in the primary zone, defined as those with more than 26 months of time in service (TIS) and greater than 6 months time in grade (TIG). The TIS/TIG requirements can be waived, and up to a maximum of 20 percent of E4's below the primary zone can be promoted early.

Promotion to E5 and E6is a three-stage process. First one is eligible via minimum time in service and time in grade. Second, one is recommended by the unit officer. Finally, the soldier must accumulate enough promotion points to exceed the minimum established by headquarters in his MOS. Note that one's MOS can change as a consequence of a promotion, particularly up to higher, "managerial" levels. Higher level promotions (E7, E8, E9) are controlled by central promotion boards by controlling both the total number as well as by deciding on a case by case basis.

Promotion points are now include promotion board score based on an oral exam before senior NCO's on one's MOS skills and general knowledge of the Army, military skill training, civilian education, military record and SQT score. The current points system is based on:

1. Promotion board rating 200

2. Commanding officer evaluation 200

3. SQT 200

4. Decorations 50

5. Military education (leadership, management courses) 150

6. Civilian education 100

7. Physical test, marksmanship 100

VIII. Conclusion

There is a great deal of institutional material in the Army recruitment and retention system which must be first understood and then be intelligently simplified in order to assess the responses of individuals to various incentives. As a research topic there is a great deal of interest in the enlistment, attrition and first reenlistment periods. This is where alot of the action is taking place, and continuation probabilities between these different stages are quite low. From this initial description of the process it seems sensible to think about modelling each of these three stages as a multinomial choice process in which the choice set is a function of personal characteristics and Army recruiting policies at each point in time, and in which the election of a particular choice is a funtion of initial offer parameters such as pay, EB and ASF, but is also the consequence of variables at subsequent stages, such as reenlistment bonuses and civilian earnings as shaped by years of service (YOS).

BAQ & VHA RATES

GRADE	WITH DEPENDENTS BAQ	VHA	TOTAL	WITHOUT DEPENDENTS BAQ	VHA	TOTAL
O-10	636.30	184.53	820.83	508.50	147.46	655.96
O-9	636.30	184.53	820.83	508.50	147.46	655.96
O-8	636.30	184.53	820.83	508.50	147.46	655.96
O-7	636.30	184.53	820.83	508.50	147.46	655.96
O-6	556.80	206.02	762.82	456.60	168.94	625.54
O-5	505.70	212.81	718.51	420.90	176.78	597.68
O-4	452.10	221.53	673.63	374.70	183.60	588.30
O-3	406.50	186.99	593.49	329.40	151.52	480.92
O-2	361.80	148.34	510.14	286.20	117.34	403.54
O-1	290.70	168.61	459.31	223.50	129.63	353.13
O-3E	406.50	223.57	630.07	329.40	181.17	510.57
O-2E	361.80	220.70	582.50	286.20	174.58	460.78
O-1E	290.70	247.09	537.79	223.50	189.97	413.47
W-4	435.90	204.87	640.77	360.90	169.62	530.42
W-3	396.90	186.54	583.44	321.90	151.29	473.19
W-2	356.40	199.58	555.98	279.90	156.74	436.64
W-1	327.30	144.01	471.31	252.60	111.14	363.74
E-9	383.40	218.54	601.94	272.40	155.27	427.67
E-8	354.00	226.56	580.56	251.10	160.70	411.80
E-7	329.40	210.82	540.22	213.60	136.70	350.30
E-6	303.30	188.05	491.35	194.10	120.34	314.44
E-5	278.70	153.28	431.98	186.60	102.63	289.23
E-4	244.80	132.19	376.99	164.40	88.78	253.18
E-3	213.60	149.52	363.12	147.00	102.90	249.90
E-2	213.60	126.02	339.62	129.90	76.64	206.54
E-1	213.60	115.34	328.94	122.70	66.26	188.96

BASIC ALLOWANCE FOR SUBSISTENCE

OFFICERS	$98.17
ENLISTED MEMBERS	
When on leave, hospitalized TDY or when authorized to mess separately:	$ 4.68
When rations in-kind are not available:	$ 5.29
When assigned to duty under emergency conditions where no messing facilities of the United States are available:	$ 7.00

DEPARTMENT OF THE ARMY
US Army Military District of Washington
Finance and Accounting Office
Washington, DC 20324

MAXIMUM FICA WAGES CY 1982 $32,400.00
MAXIMUM FICA TAX 2,170.80
6.70%

FICA INFORMATION FOR CY 1983 IS NOT AVAILABLE AT THIS TIME

MONTHLY BASIC PAY

Effective 1 October 1982

YEARS OF SERVICE

PAY GRADE	UNDER 2	2	3	4	6	8	10	12	14	16	18	20	22	26
O-10	4686.90	4791.60												
O-9	4154.10	4263.00	4353.60	4353.60	4353.60	4464.30	4464.30	4650.00	4650.00	4791.60				
O-8	3762.30	3875.10	3967.20	3967.20	3967.20	4263.00	4263.00	4464.30	4464.30	4650.00	4791.60			
O-7	3126.30	3339.00	3339.00	3339.00	3488.40	3488.40	3690.90	3690.90	3875.10	4263.00	4555.80			
O-6	2317.20	2546.10	2712.60	2712.60	2712.60	2712.60	2712.60	2712.60	2804.70	3248.40	3414.60	3488.40	3690.90	4002.90
O-5	1853.40	2176.50	2326.50	2326.50	2326.50	2326.50	2397.30	2526.00	2695.20	2896.80	3063.30	3155.70	3266.10	3266.10
O-4	1562.10	1902.00	2029.20	2029.20	2066.40	2158.20	2305.20	2434.80	2546.10	2657.70	2731.20	2731.20	2731.20	2731.20
O-3	1451.70	1623.00	1734.90	1919.70	2011.50	2084.10	2196.30	2305.20	2361.90	2361.90	2361.90	2361.90	2361.90	2361.90
O-2	1265.70	1382.40	1660.80	1716.60	1752.60	1752.60	1752.60	1752.60	1752.60	1752.60	1752.60	1752.60	1752.60	1752.60
O-1	1098.90	1143.90	1382.40	1382.40	1382.40	1382.40	1382.40	1382.40	1382.40	1382.40	1382.40	1382.40	1382.40	1382.40
O-3E	0.00	0.00	0.00	1919.70	2011.50	2084.10	2196.30	2305.20	2397.30	2397.30	2397.30	2397.30	2397.30	2397.30
O-2E	0.00	0.00	0.00	1716.60	1752.60	1808.10	1902.00	1974.90	2029.20	2029.20	2029.20	2029.20	2029.20	2029.20
O-1E	0.00	0.00	0.00	1382.40	1476.60	1531.20	1586.40	1641.60	1716.60	1716.60	1716.60	1716.60	1716.60	1716.60
W-4	1479.00	1586.40	1586.40	1623.00	1696.80	1771.50	1845.90	1974.90	2066.40	2139.30	2196.30	2267.70	2343.60	2526.00
W-3	1344.30	1458.30	1458.30	1476.60	1494.30	1603.50	1696.80	1752.60	1808.10	1862.40	1919.70	1994.10	2066.40	2139.30
W-2	1177.50	1273.50	1273.50	1310.70	1382.40	1458.30	1513.20	1568.70	1623.00	1679.70	1734.90	1789.80	1862.40	1862.40
W-1	981.00	1124.70	1124.70	1218.60	1273.50	1328.40	1382.40	1439.70	1494.30	1549.20	1603.50	1660.80	1660.80	1660.80
E-9	0.00	0.00	0.00	0.00	0.00	0.00	1720.20	1759.20	1799.10	1840.50	1881.30	1917.90	2019.00	2215.20
E-8	0.00	0.00	0.00	0.00	0.00	1443.00	1483.80	1522.80	1562.70	1603.80	1640.70	1681.20	1779.90	1978.50
E-7	1007.40	1087.20	1128.00	1167.00	1207.20	1245.30	1285.50	1325.10	1385.10	1424.40	1464.60	1483.50	1583.10	1779.90
E-6	866.40	944.70	984.30	1026.00	1063.80	1102.80	1143.30	1202.10	1239.90	1279.80	1299.30	1299.30	1299.30	1299.30
E-5	760.80	828.00	867.90	905.70	965.10	1004.40	1044.60	1083.00	1102.80	1102.80	1102.80	1102.80	1102.80	1102.80
E-4	709.50	749.10	792.90	854.70	888.60	888.60	888.60	888.60	888.60	888.60	888.60	888.60	888.60	888.60
E-3	668.40	704.70	733.20	762.30	762.30	762.30	762.30	762.30	762.30	762.30	762.30	762.30	762.30	762.30
E-2	642.90	642.90	642.90	642.90	642.90	642.90	642.90	642.90	642.90	642.90	642.90	642.90	642.90	642.90
E-1	*573.60	*												

* - Maximum pay for grade E-1

ENLISTEL MOS STRUCTURE
(THROUGH JUNE 85 UPDATE, AR 611-201)

MOS	GRADE LO/HI	TITLE	ASSOCIATED ASI
00D	3-9	SPECIAL DUTY ASSIGNMENT (DUTY MOS ONLY)(SEE PARA 7-6, AR611-201)	
00U	6-9	EO NCO (SOLDIER ONLY SEE PARA 7-7, AR 611-201)	
00Z	9-9	CMD SGT MAJOR (SEE PARA 1-19, AR 611-201)	
		CMF 11 INFANTRY	
• 11B	3-9	INFANTRYMAN	C2 F1 G5 V7 V8 V9
• 11C	3-7	INDIRECT FIRE INFANTRYMAN	F1 V7 V8 V9
• 11H	3-7	HV ANTI-AR WPN INFANTRYMAN	E9
• 11M	3-7	FV INFANTRYMAN	J3 D8 (T1 SL 3 ONLY)
		CMF 12 COMBAT ENGINEERING	
• 12B	3-7	COMBAT ENGR	C2 V7 V8 V9
• 12C	3-7	BRIDGE CRM	
• 12E	3-7	ATOMIC DEMOLITION MUNITIONS SP	
• 12F	3-7	ENGR TRACKED VEH CRM	
• 12Z	8-9	COMBAT ENGRING SR SGT	
		CMF 13 FIELD ARTILLERY	
• 13B	3-7	CANNON CRMBR	U6
• 13C	3-7	TACFIRE OPS SP	Y1 (SL 4 ONLY)
• 13E	3-7	CANNON FDC SP (E7 IN RC ONLY)	X3
• 13F	3-7	FIRE SPT SP	R8 X3
• 13M	3-5	MLRS CRMBR	R4 S8
• 13R	3-6	FA FIREFINDER RDR OP	X5
13W	8-8	FA TGT ACQ SR SGT	X3
13Y	8-8	CANNON/MSL SR SGT	X3
13Z	9-9	FA SR SGT	X3
15E	3-7	LANCE CRMBR/MLRS SGT	Z3
15D	3-7	PERSHING MSL CRMBR	R4 T1
15J	3-7	MLRS/LANCE OP/FD SP	
• 17B	3-7	FA RDR CRMBR	
• 17C	3-7	FA TARGET ACQ SP	X3
• 82C	3-7	FIELD ARTY SURVEYOR	
		CMF 16 FIELD ARTILLERY	
16C	3-7	HERCULES MSL CRMBR	
16D	3-6	HERCULES FIRE CONTROL CRMBR	
16E	3-7	HAWK MSL CRMBR	
16F	3-6	HAWK FIRE CONTROL CRMBR	
• 16G	3-7	ROLAND SYSTEM CRMBR (RC)	
16H	3-7	ADA OP-INTEL ASSISTANT	E7
• 16J	3-6	DEF ACQ RDR OPR	
16L	3-7	SGT YORK AIR DEF GUN SYS CRMBR	R4
• 16P	3-6	ADA CHAPARRAL MSL CRMBR	E7
• 16R	3-7	ADA SHORT RG GNRY CRMBR	E7
• 16S	3-7	MANPADS CRMBR	E7
16T	3-7	PATRIOT MSL CRMBR	R4
16Z	8-9	ADA SR SGT	
93F	3-7	FA MET CRMBR	H1 Y1 Y9
		CMF 18 SPECIAL OPERATIONS	
• 18B	6-7	SPECIAL OPERATIONS WPNS SGT	F1 R8 W7 W8 W9
• 18C	6-7	SPECIAL OPERATIONS ENGR SGT	F1 W7 W8 W9
• 18D	6-7	SPECIAL OPERATIONS MEDICAL SGT	F1 W7 W8 W9
• 18E	6-7	SPECIAL OPERATIONS COMMO SGT	U9 F1 W7 W8 W9
• 18F	6-7	SPECIAL OPERATIONS INTEL SGT	D8 W7 W8 W9
• 18Z	8-9	SPECIAL OPERATIONS SENIOR SGT	U9 W8 W7 W8 W9
		CMF 19 ARMOR	
• 19D	3-7	CAV SCOUT	A8 C2 C5 D3 D8 E9 J3 D6 R6 Z1
• 19E	3-7	M48-M60 AR CRM	D3 L5 U8 R8 R5
• 19K	3-7	M1 ABRAMS AR CRM	A8 U8
• 19Z	8-9	AR SR SGT	A8 C5 D8 L8 U8
		CMF 23 AIR DEFENSE SYSTEMS MAINTENANCE	
24C	3-7	I HAWK FIRING SEC MECH	Y1
24E	3-6	I HAWK FIRE CON MECH	G4
24F	3-6	I HAWK INFO COORD CEN MECH	
• 24M	3-7	VULCAN SYS MECH	X2
• 24N	3-7	CHAPARRAL SYS MECH	
24R	3-7	DEF ACQ RDR MECH	
24D	3-7	NIKE-HERCULES FC MECH	U2
24R	7-8	I HAWK MASTER MECH	Y1
• 24S	3-7	ROLAND MECH (RC)	
24T	3-8	PATRIOT OP/SYS MECH	T5
24U	3-7	NIKE-HERCULES ELECTRONICS MECH	
24W	3-7	SGT YORK AIR DEF GUN SYS MECH	
25L	3-7	ADA CMD/CONT SYS OP/REP	
26H	3-6	AIR DEF RDR REP	
		CMF 27 LAND COMBAT/AIR DEF SYS INTERMEDIATE MAINTENANCE	

MOS	GRADE LO/HI	TITLE	ASSOCIATED ASI
		CMF 33 EW/INTERCEPT SYSTEMS MAINTENANCE	
33M	3-7	EW/I STRAT C/C REPAIRER	E2 M4 W4
33P	3-6	EW/I RCVR EQUIP REPAIRER	E2 W4
33Q	3-6	EW/I P/S EQUIP REPAIRER	E2 M4 R2
33R	3-6	EW/I AVN SYSTEM REPAIRER	
33T	3-7	EW/I TACTICAL SYSTEMS REPAIRER	M4
33Z	8-9	EW/I SYSTEMS MAINT SUPERVISOR	
		CMF 51 GENERAL ENGINEERING	
• 00B	3-7	DIVER	
51B	3-5	CARPENTRY/MASONRY SP	
51C	3-5	STRUCTURES SP	
51G	3-5	MATERIALS QUALITY SP	
51H	6-7	CONST ENGR SUPV	
• 51K	3-5	PLUMBER	
51M	3-7	FIREFIGHTER	
• 51R	3-5	INTERIOR ELECTRICIAN	
51T	6-7	TECH ENGR SUPV	
51Z	8-9	GEN ENGRING SUPV	
52E	5-7	PRIME POWER PROD SP	S2 S3 S4
• 52G	3-7	TRANSMISSION & DIST SP	
53B	3-7	IND GAS PROD SP (RC)	
62E	3-5	HEAVY CONST EQ OP	
62F	3-5	CRANE OPERATOR	
62G	3-6	QUARRYING SP	
62H	3-6	CONCRETE/ASPHALT EQ OP	
62J	3-5	GEN CONST EQ OP	C3
62N	6-7	CONST EQ SUPV	C3
81B	3-5	TECH DRAFTING SP	
82B	3-5	CONST SURVEYOR	
		CMF 54 CHEMICAL	
• 54C	3-7	SMOKE OPS SP	
54E	3-7	NBC SP	J5
54Z	8-9	CHEM SR SGT	J5
92D	3-6	CHEM LAB SP	
		CMF 55 AMMUNICATION	
55B	3-7	AMMO SP	B1
55D	3-9	EOD SP	J5
55G	3-7	NUCLEAR WPN SP	Y2
55R	3-6	AMMO STK CLK & ACTG SP	R6 Y1
55X	6-7	AMMO INSP	
55Z	8-9	AMMO SUPV	
		CMF 63 MECHANICAL MAINTENANCE	
41C	3-6	FIRE CONTROL INSTR REPAIRER	L8
41J	3-7	OFFICE MACH REP	
44B	3-5	METAL WORKER	
44E	3-7	MACHINIST	
45B	3-5	SMALL ARMS REP	
• 45D	3-8	SP FA TURRET MECH	
• 45E	3-8	M1 ABRAMS TANK TURRET MECH	
45G	3-6	FIRE CONTROL SYS REP	L8
45K	3-6	TANK TURRET REP	U3 L8 R5
45L	3-5	ARTY REP	
• 45N	3-5	M60A1/A3 TANK TURRET MECH	R8
• 45T	3-5	BRADLEY FVS TURRET MECH	D3
45Z	7-7	ARMT/FIRE CONTROL MAINT SUPV	R5
52C	3-6	UTIL EQ REP	
52D	3-6	POWER GEN EQ REP	U2
52F	3-6	TURBINE ENG DRIVEN GEN REP	
62B	3-7	CONST EQ REP	
63B	3-8	LT WHEEL VEHICLE MECH	H5
• 63D	3-8	SP FA SYS MECH	H8
• 63E	3-8	M1 ABRAMS TANK SYS MECH	H8
63G	3-5	FUEL & ELEC SYS REP	L8
63H	3-7	TRACK VEHICLE REPAIRER	D3 H8 L8 R5
63J	3-6	QM & CHEM EQ REP	
• 63N	3-8	M60A1/A3 TANK SYS MECH	H8 R5
63S	3-5	HEAVY WHEEL VEH MECH	H8
• 63T	3-8	BRADLEY FVS MECH	D3 H8
63W	3-5	WHEEL VEH REPAIRER	H8
63Y	3-5	TRACK VEH MECH	H5
63Z	8-9	MECH MAINT SUPV	
		CMF 64 TRANSPORTATION	
57H	3-7	CARGO SPECIALIST	B1 G1
61B	3-7	WATERCRAFT OPERATOR	E4
61C	3-7	WATERCRAFT ENGINEER	
61Z	8-9	MARINE SENIOR SERGEANT	
64C	3-7	MOTOR TRANSPORT OP	R4
64Z	8-9	TRANSPORTATION SENIOR SERGEANT	
67G	3-7	LOCOMOTIVE REPAIRER (RC)	

MOS	GRADE LO/HI	TITLE	ASSOCIATED ASI
		CMF 76 SUPPLY AND SERVICE	
43E	3-8	PARACHUTE RIGGER	W7 W8 W9
43M	3-7	FABRIC REP SP	
57E	3-8	LAUNDRY/BATH SP	
57F	3-8	GRAVES REGISTRATION SP	
76C	3-5	EQ RECORDS/PARTS SP	B5
76P	3-7	MATERIEL CONTROL & ACCOUNTING SP	F3 F9 B3 R4 T6 U5 W8
76V	3-7	MATERIEL STORAGE & HANDLING SP	B1 F3
76X	3-7	SUBSISTENCE SUPPLY SP	W5
76Y	3-7	UNIT SUPPLY SP	A3 F4 G5
76Z	8-9	SR SUPPLY SGT	A3 F3 F4 F9 G5 T6
		CMF 79 RECRUITMENT AND REENLISTMENT	
00E	3-9	RECRUITER (RC)	V7
00R	5-9	RECRUITER/RETENTION NCO	V7
79D	6-9	REENLISTMENT NCO (RC)	
		CMF 81 TOPOGRAPHIC ENGINEERING	
41B	3-5	TOPOGRAPHIC INST REP SP	
81C	3-7	CARTOGRAPHER	
81Q	3-7	TERRAIN ANALYST	
81Z	6-9	TOPOGRAPHIC ENGRING SUPV	
82D	3-7	TOPOGRAPHIC SURVEYOR	
83E	3-5	PHOTO AND LAYOUT SP	
83F	3-7	PHOTOLITHOGRAPHER	J6
		CMF 84 PUBLIC AFFAIRS AND AUDIO-VISUAL	
26T	3-6	RADIO/TV SYS SP	
41E	3-5	AUDIO/VISUAL EQ REP	
71Q	3-7	JOURNALIST	J6
71R	3-7	BROADCAST JOURNALIST	
81E	3-6	ILLUSTRATOR	
84B	3-7	STILL PHOTO SP	J6
84C	3-5	MOTION PICTURE SP	
84F	3-6	AUDIO/TV SP	
84T	7-7	TV/RADIO BROADCAST OPS CH	
84Z	8-9	PA/AV CHIEF	
		CMF 91 MEDICAL	
01H	4-6	BIOLOGICAL SCIENCES ASSISTANT	
35G	3-5	BIOMEDICAL EQ SP, BASIC	
35U	5-9	BIOMEDICAL EQ SP, ADV	
42C	4-7	ORTHOTIC SP	
42D	3-7	DENTAL LAB SP	
42E	3-9	OPTICAL LAB SP	
76J	3-9	MEDICAL SUPPLY SP	F3 R6 T8 U8
71G	3-8	PATIENT ADMIN SP	
91A	3-5	MEDICAL SPECIALIST	B2 N8 T6 V1 Y8
91B	5-9	MEDICAL NCO	B2 N8 T6 V1 W7 W8 W9 Y1 Y8 R3
91C	5-9	PRACTICAL NURSE	
91D	3-8	OPERATING ROOM SP	
91E	3-9	DENTAL SP	X2
91F	3-7	PSYCHIATRIC SP	
91G	3-7	BEHAVIORAL SCIENCE SP	
91H	3-7	ORTHOPEDIC SP	
91J	3-7	PHYSICAL THERAPY SP	
91L	3-7	OCCUPATIONAL THERAPY SP	
91N	3-7	CARDIAC SP	Y6
91P	3-8	X-RAY SP	
91Q	3-8	PHARMACY SP	Y7
91R	3-9	VETERINARY FOOD INSP SP	B7
91S	3-9	ENVIRONMENTAL HEALTH SP	
91T	3-7	ANIMAL CARE SP	
91U	3-7	ENT SP	
91V	4-7	RESPIRATORY SP	
91W	4-7	NUCLEAR MEDICINE SP	
91X	5-7	HEALTH PHYSICS SP	
91Y	3-7	EYE SP	
92B	3-9	MEDICAL LAB SP	R6 Y8
92C	5-7	CYTOLOGY SP	
94F	3-9	HOSPITAL FOOD SERVICE SP	
		CMF 92 PETROLEUM	
51N	3-7	WATER TRT SP	
76W	3-9	PETROLEUM SUPPLY SP	F3 R4
92C	3-7	PETROLEUM LAB SP	V6
		CMF 93 AVIATION OPERATION	
93B	3-9	ATC SYSTEMS, SUBSYSTEMS AND EQUIP REP	
93E	3-8	METEOROLOGICAL OBSERVER	Y5
93H	3-7	ATC TOWER OPERATOR	

CMF 27 LAND COMBAT/AIR DEF SYS INTERMEDIATE MAINTENANCE

21G	3-7	[illegible]ING ELECTRONICS MAT SP	Y1
21L	3-8	[illegible]ING ELECTRONICS REP	Y1
22L	3-6	HERCULES TEST EQ REP	
22N	3-6	NIKE-HERCULES MSL LNCH REP	
23N	3-4	NIKE HERCULES TRACK RDR REP	
23U	3-6	NIKE HERCULES HIGH POWER RDR SIMULATOR REP	
23W	7-9	NIKE HERCULES MAINT CHIEF	
24H	3-6	I HAWK FIRE CON REP	W2 Y1
24J	3-6	I HAWK PULSE RDR REP	Y1
24K	3-6	I HAWK CONTINUOUS WAVE RDR REP	Y1
24L	3-6	I HAWK LAUNCHER/MECH SYS REP	Y1
24V	7-9	I HAWK MAINT CHIEF	
27B	3-7	LCSS TEST SP/LANCE REP	
* 27C	3-7	ROLAND REP (RC)	
* 27D	3-6	ROLAND FAIS REP (RC)	
27E	3-6	TOW/DRAGON REP	B3 J9 L9 Y1
27F	3-6	VULCAN REP	
27G	3-7	CHAPARRAL/REDEYE REP	
27L	3-6	LANCE REP	
27M	3-6	MLRS REP	
27N	3-6	FAAR REP	
27P	3-7	SGT YORK AIR DEF RDR/ELEC REP	
27Q	3-6	SGT YORK AIR DEF GUN SYS TEST SP	
27Z	8-9	BAL/LC/LAD SYS MAINT CHIEF	
46N	3-7	PERSHING ELEC/MECH REP	Y1

CMF 28 AVIATION COMMUNICATIONS ELECTRONICS SYSTEMS MAINTENANCE

26E	3-6	AERIAL RADAR SENSOR REPAIRER	
26F	3-5	AERIAL PHOTO SENSOR REP	
26H	3-6	AERIAL ELEC WARN/DEF EQ REP	
35K	3-5	AVIONIC MECH	W6 X1 Z4
35L	3-5	AVIONIC COMMO EQ REP	
35M	3-5	AVIONIC NAV/FLT CNTL EQ REP	
35P	6-9	AVIONIC EQ MAINT SUPV	X1 Z4 E4
35R	3-5	AVIONIC SP EQ REP	R5 WA

CMF 29 COMMUNICATIONS ELECTRONICS SYSTEM MAINTENANCE

26C	3-6	TARGET ACQ SVL RADAR REPAIRER	R5
26L	3-7	TAC MW SYS REP	H3
26V	3-7	STR MW SYS REP	A5 C4 H4 HJ R2
26Y	3-7	SATCOM EQ REP	A1 E3 L1 L4 L7 A8 P1 P4 Q1 R2
29F	3-6	FIXED COMSEC EQUIP REP	A2 H8 H3 R9 Y5 G8
29M	3-6	TELEPHONE CEN OFFICE REP	B2 H3 H4 T1 V2
29V	7-7	COMSEC MAINT CHIEF	K8 HJ R9 Y5 X6 A2 B7 Q8
29S	3-6	FIELD COMM SEC EQUIP REP	A6 X6 Q8
31E	3-6	FIELD RADIO REP	V9
31J	3-6	TTY WRITER REP	B3 A2 R1 T2
32H	3-6	FIXED STATION RADIO REP	S6 H1 B7
32Z	7-9	C-E MAINT CHIEF	S1
35C	3-6	ATC REP	X1
35E	3-6	SP ELEC DEVICES REP	
35H	3-8	CALIBRATION SPECIALIST	
36L	3-6	TRANS ELECT SWITCH SYSTEMS REPAIRER	P2 P3 S1

CMF 31 COMMUNICATIONS-ELECTRONICS OPERATIONS

26Q	3-7	TAC SAT/MW SYS OP	R8 D6
31C	3-6	SINGLE CHANNEL RADIO OPERATOR	A4 V9
31K	3-5	COMBAT SIGNALER	
31M	3-6	MULTICHANNEL COMMO EQ OP	
31N	3-6	TAC CIRCUIT CONTROL	
31V	3-8	TAC COMMO SYS OP/MECH	F7 A4 W7 W8 W9
31Z	7-9	C-E OPS CHIEF	A7 B9 D9 K7 Q3
32D	3-7	STATION TECH CONTROLLER	A1 H4
36C	3-7	WIRE SYS INSTALL/OPER	B2 F2 F6
36M	3-6	WIRE SYS OP	K4
72E	3-7	COMBAT TELECOM CENTER OP	Z2 E1
72G	3-7	AUTO DATA TELECOM CENTER OP	B9 H5 Q3 U3
72H	3-7	CEN OFFICE OPN OP	

64Z	8-9	TRANSPORTATION SENIOR SERGEANT	
65B	3-7	LOCOMOTIVE REPAIRER (RC)	
65D	3-7	RAILWAY CAR REPAIRER (RC)	
65E	3-5	AIRBRAKE [illegible]ER (RC)	
65F	3-4	LOCOMOTI[illegible]TRICIAN (RC)	
65G	3-7	RAILWAY [illegible]P (RC)	
65H	3-7	LOCOMOTIVE OPERATOR (RC)	
65J	3-7	TRAIN CREWMEMBER (RC)	
65K	3-7	RAILWAY MOVEMENT COORDINATOR (RC)	
65Z	8-9	RAILWAY SR SERGEANT (RC)	
71N	3-7	TRAFFIC MANAGEMENT COORDINATOR	H2 R6

CMF 67 AIRCRAFT MAINTENANCE

66G	5-6	UTILITY AIRPLANE TECH INSP	A2 Q2 E6
66H	5-6	OBSN AIRPLANE TECH INSP	A2 B7 Q2
66J	6-6	AIRCRAFT ARMAMENT TECH INSP	A2 Q2 X1
66N	5-6	UTILITY HEL TECH INSP	A2 Q2
66R	5-6	AH-64 ATTACH HEL TECH INSP	A2 Q2
66S	5-6	SCOUT HEL TECH INSP	A2 Q2
66T	5-6	TAC TRAN HEL TECH INSP	A2 Q2 Y1
66U	5-6	MEDIUM HEL TECH INSP	A2 Q2
66V	5-6	OBSN/SCOUT HEL TECH INSP	A2 Q2
66X	5-6	HEAVYLIFT HEL TECH INSP	A2 Q2
66Y	5-6	AH-1 ATTACK HEL TECH INSP	A2 Q2
67G	3-7	UTILITY AIRPLANE REP	A2 Q2
67H	3-6	OBSN AIRPLANE REP	A2 B7 Q2
66U	5-6	MEDIUM HEL TECH INSP	A2 Q2 Y1
67R	3-7	AH-64 ATTACK HEL REP	A2 Q2
67S	3-6	SCOUT HEL REP	A2 Q2
67T	3-7	TAC TRANS HEL REP	A2 Q2
67U	3-7	MEDIUM HEL REP	A2 Q2 Y1
67V	3-6	OBSN/SCOUT HEL REP	A2 Q2 Z1
67X	3-6	HEAVY LIFT HEL REP	A2 Q2
67Y	3-7	AH-1 ATTACK HEL REP	A2 Q2
67Z	6-9	AIRCRAFT MAINT SR SGT	A2 Q2 X1
68B	3-6	AIRCRAFT POWERPLANT REP	E6 X1 Y1
68D	3-6	AIRCRAFT POWERTRAIN REP	A2 X1 Y1
68F	3-6	AIRCRAFT ELECTRICIAN	X1 Y1 E6
68G	3-6	AIRCRAFT STRUCTURAL REP	Y1 E6
68H	3-6	AIRCRAFT PNEUDRAULICS REP	A2 X1 Y1
68J	3-7	AIRCRAFT FIRE CONTROL REP	A2 X1
68K	7-7	AIRCRAFT COMP REP SUPV	A2 X1
68M	3-5	AIRCRAFT WEAPON SYS REP	A2 X1

CMF 71 ADMINISTRATION

00J	5-9	CLUB MANAGER	
03C	3-7	PHYSICAL ACTIVITIES SP	
71C	4-6	EXECUTIVE ADMINISTRATIVE ASSISTANT	
71D	3-9	LEGAL SPECIALIST	
71E	5-9	COURT REPORTER	
71L	3-9	ADMINISTRATIVE SP	E4 F5 P6
71M	3-9	CHAPEL ACTIVITIES SP	
73C	3-7	FINANCE SP	
73D	3-7	ACCOUNTING SP	
73Z	6-9	FINANCE SR SGT	
75B	3-6	PER ADMIN SP	
75C	3-6	PER MGMT SP	A3
75D	3-6	PER RECORDS SP	
75E	3-6	PER ACTIONS SP	
75F	3-6	PERS INFO SYS MGMT SP	
75Z	7-9	PER SR SGT	A3

CMF 74 AUTOMATIC DATA PROCESSING

34C	5-7	DAS3 COMPUTER REP	Y1
34F	5-7	DSTE REPAIRERS	H5 E1
34H	5-7	ADMSE REP	
34K	5-7	IBM 360 REP	T7
34L	3-6	FA DIGITAL SYS REP (E4 ONLY IN AC)	H8
34T	3-5	TACTICAL COMPUTER SYSTEMS REPAIRER	
34Y	3-6	FA TAC FIRE DIR REP	Y1
34Z	8-9	ADPE MAINT SUPV	
74D	3-7	COMPUTER/MACHINE OP	R6 T3
74F	3-7	PROGRAMMER/ANALYST	E8 H9
74Z	8-9	DATA PROCESSING NCO	

93H	3-7	ATC TOWER OPERATOR	
93J	3-9	ATC RADAR CONTROLLER	E8
93P	3-9	FLIGHT OPERATIONS COORDINATOR	A2

CMF 94 FOOD SERVICE

94B	3-9	FOOD SERVICE SP	B1 Z5

CMF 95 LAW ENFORCEMENT

95B	3-9	MILITARY POLICE	A9 H3 P7 B9 V5 Z6
95C	3-8	CORRECTIONS NCO	
95D	4-9	CID SPECIAL AGENT	Y2 U7

CMF 96 MILITARY INTELLIGENCE

96B	3-8	INTELLIGENCE ANALYST	H7 B8
96D	3-8	IMAGERY ANALYST	H8 B9
96F	3-8	PSYOP SPECIALIST	
96H	3-7	AERIAL INTEL SPECIALIST	V3
* 96R	3-8	GND SURVL SYS OP	B8
96Z	9-9	INTEL SENIOR SGT	G9 H7
97B	4-9	CI AGENT	H7
97C	4-8	AREA INTELLIGENCE SP	H7
97E	4-7	INTERROGATOR	H7
97G	3-9	SIGSEC SPECIALIST	

CMF 97 BAND

02B	3-4	CORNET OR TRUMPET PLAYER	
02C	3-4	BARITONE OR EUPHONIUM PLAYER	
02D	3-4	FRENCH HORN PLAYER	
02E	3-4	TROMBONE PLAYER	
02F	3-4	TUBA PLAYER	
02G	3-4	FLUTE OR PICCOLO PLAYER	
02H	3-4	OBOE PLAYER	
02J	3-4	CLARINET PLAYER	
02K	3-4	BASSOON PLAYER	
02L	3-4	SAXOPHONE PLAYER	
02M	3-4	PERCUSSION PLAYER	
02N	3-4	PIANO PLAYER	
02P	7-7	BRASS GROUP LEADER	
02Q	7-7	WOODWIND GROUP LEADER	
02R	7-7	PERCUSSION GROUP LEADER	
02S	4-9	SP BANDSPERSON	
02T	3-4	GUITAR PLAYER	
02Z	8-9	ENLISTED BANDLEADER	

CMF 98 ELECTRONIC WARFARE/CRYPTOLOGIC OPERATIONS

05D	3-6	EW/SIGINT IDENT/LO	H3 A9 H5 T4
05H	3-7	EW/SIGINT INTCP-IMC	H6 R2 R6 H9 A7 U1
05K	3-7	EW/SIGINT N-M INTCP	H8 T9
98C	3-7	EW/SIGINT ANALYST	C8 J2 H3 H8
98G	4-8	EW/SIGINT VOICE INTCP	B4 J1 H3 H8 J7 Z8
98J	3-7	EW/SIGINT NC INTCP	
98Z	8-9	EW/SIGINT CHIEF	

REPORTING CODES

COLLEGE TRAINEE- -09D
SIMULTANEOUS MEMBERSHIP PROGRAM- - - - - - - - - - - - - -09R
COMMISSIONED OFFICER CANDIDATE - - - - - - - - - - - - -09S
COLLEGE STUDENT ARMY NATIONAL GUARD OFFICER PROGRAM- - -09T
WARRANT OFFICER CANDIDATE- - - - - - - - - - - - - - - -09W
EQUAL OPPORTUNITY ADVISOR- - - - - - - - - - - - - - - -00V

* MOS CLOSED TO FEMALE SOLDIERS
(RC) RESERVE FORCES MOS

REFER TO AR 611-201 FOR ACCURACY OF INFORMATION

U.S. ARMY SOLDIER SUPPORT CENTER - NATIONAL CAPITAL REGION

ADDITIONAL SKILL IDENTIFIER (ASI)

ASI "A1" - SATELLITE COMMUNICATIONS CONTROL
ASI "A2" - AVIATION SAFETY
ASI "A3" - FORCE DEVELOPMENT (TAADS)
ASI "A4" - INTERNATIONAL MORSE CODE (IMC)
ASI "A5" - COMMUNICATIONS MAINTENANCE (AN/MRC-85)
ASI "A6" - COMMUNICATIONS OPERATIONS/MAINTENANCE (TSEC/CY-104)
ASI "A7" - COMMUNICATIONS MAINTENANCE SUPERVISION (TASB-AN/TTC-25, AN/TTC-38)
ASI "A8" - MASTER GUNNERY (M1 TANK)
ASI "A9" - PATROL DOG HANDLING
ASI "B1" - ROUGH TERRAIN CONTAINER HANDLING AND OPERATION
ASI "B2" - TELEPHONE INSTALLATION (KEY SYSTEM)
ASI "B3" - TELETYPEWRITER MAINTENANCE (SPECIALIZED EQUIPMENT)
ASI "B4" - NOT USED AT THIS TIME
ASI "B5" - TACTICAL ARMY COMBAT SERVICE SUPPORT SYSTEM (TACCS/STANDARD MAINTENANCE SYSTEM (SAMS) OPERATOR
ASI "B6" - COMMUNICATIONS MAINTENANCE (AN/TSC-38)
ASI "B7" - AIRCRAFT MAINTENANCE (EJECTION SEAT)
ASI "B8" - M60A3 TANKER
ASI "B9" - COMMUNICATIONS OPERATION (DEFENSE SPECIAL SECURITY)
ASI "C1" - NOT USED AT THIS TIME
ASI "C2" - DRAGON GUNNERY
ASI "C3" - WELL DRILLING
ASI "C4" - COMMUNICATIONS TECHNICAL EVALUATION
ASI "C5" - MASTER GUNNERY (M60A1 & M48A5)
ASI "C6" - NOT USED AT THIS TIME
ASI "C7" - NOT USED AS THIS TIME
ASI "C8" - TRANSCRIBING/GISTING
ASI "C9" - NOT USED AT THIS TIME
ASI "D1" - BREAD BAKING
ASI "D2" - DERMATOLOGY SPECIALTY
ASI "D3" - BRADLEY FIGHTING VEHICLE SYSTEM (BFVS)
ASI "D4" - NOT USED AT THIS TIME
ASI "D5" - NOT USED AT THIS TIME
ASI "D6" - AN/TRC-170(V) DIGITAL TROPOSCATTER OPERATIONS (TRI-TAC)
ASI "D7" - PROCUREMENT QUALITY ASSURANCE
ASI "D8" - MASTER GUNNERY (M60A3)
ASI "D9" - RADIO FREQUENCY MANAGEMENT (ENLISTED)
ASI "E1" - POSITION LOCATION REPORTING SYSTEM (PLRS)
ASI "E2" - LAFAIRE VITE MAINTENANCE (AN/FAQ-91)
ASI "E3" - AN/USC-28 SATELLITE COMMUNICATIONS SET OPERATIONS/MAINTENANCE
ASI "E4" - ATTACHE ADMINISTRATIVE SUPPORT
ASI "E5" - NOT USED A" THIS TIME
ASI "E6" - VEHICLE OPERATION AND MAINTENANCE (LIGHTER AIR CUSHION VEHICLE)
ASI "E7" - RADIO CONTROLLED MINIATURE AERIAL TARGET OPERATIONS
ASI "E8" - ADP PROGRAMMING AND ANALYSIS (WWMCCS)
ASI "E9" - IMPROVED TOW VEHICLE (ITV) OPERATION
ASI "F1" - OPERATIONS AND INTELLIGENCE (SPECIAL FORCES)
ASI "F2" - ANTENNA INSTALLATION
ASI "F3" - CORPS/INSTALLATION SUPPLY OPERATIONS AUTOMATED
ASI "F4" - DIVISIONS SUPPLY OPERATIONS AUTOMATED (PROPERTY BOOK)
ASI "F5" - POSTAL OPERATIONS
ASI "F6" - CABLE SPLICER
ASI "F7" - FIELD ARTILLERY MAINTENANCE (FADAC)
ASI "F8" - FLIGHT SIMULATOR (UH1FS) CONSOLE OPERATIONS
ASI "F9" - DIVISION SUPPLY OPERATIONS AUTOMATED (STOCK ACCOUNTING)
ASI "G1" - TERMINAL CRANE OPERATIONS
ASI "G2" - RADAR SIGNAL SIMULATOR (AN/TPQ-11) OPERATION/MAINTENANCE
ASI "G3" - NON DIVISIONAL SUPPLY OPERATIONS AUTOMATED (NCR 500)
ASI "G4" - SPACOL OPERATIONS
ASI "G5" - STANDARD PROPERTY BOOK SYSTEM (SPBS)
ASI "G6" - RADAR ENGAGEMENT SIMULATOR (AN/TPQ-29) OPERATION/ORGANIZATIONAL MAINTENANCE
ASI "G7" - COSMIC FULL MAINTENANCE (FIELD)
ASI "G8" - COSMIC EQUIPMENT FULL MAINTENANCE (FIXED)
ASI "G9" - DASE
ASI "H1" - NOT USED AT THIS TIME
ASI "H2" - PERSONAL PROPERTY MOVEMENT
ASI "H3" - PHYSICAL SECURITY OPERATIONS
ASI "H4" - DATA COMMUNICATIONS
ASI "H5" - COMMUNICATIONS OPERATIONS AND MAINTENANCE (STREAMLINER)
ASI "H6" - DATA ANALYSIS (TEMPEST)
ASI "H7" - NOT USED AT THIS TIME
ASI "H8" - RECOVERY OPERATIONS
ASI "H9" - SYSTEM SOFTWARE PROGRAMMING/ANALYSIS (ASSIST)
ASI "J1" - TELEMETRY COLLECTION OPERATIONS
ASI "J2" - LEFOX COLLECTION AND PROCESSING SYSTEM (AN/FSQ-86(V))
ASI "J3" - BRADLEY FIGHTING VEHICLE MASTER GUNNER
ASI "J4" - NOT USED AT THIS TIME
ASI "J5" - TECHNICAL ESCORTING
ASI "J6" - REPRODUCTION EQUIPMENT REPAIR
ASI "J7" - NOT USED AT THIS TIME
ASI "J8" - PHOTOJOURNALISM
ASI "J9" - EQUIPMENT OPERATION/MAINTENANCE TEST SET, GUIDED MISSILE SYSTEM (TOW-GROUND)
ASI "K1" - NOT USED AT THIS TIME
ASI "K2" - NON-MORSE ANALYSIS (SENIOR)
ASI "K3" - COMMUNICATIONS ELECTRONIC COUNTERMEASURES OPERATIONS
ASI "K4" - OPERATOR/CALL SERVICE OPERATIONS (AN/TTC-39)
ASI "K5" - WEATHER FORECASTING

ASI "T9" - CRYPTANALYSIS
ASI "U1" - ENCIPHERED SIGNALS TRAFFIC ANALYSIS
ASI "U2" - POWER GENERATION EQUIPMENT,ORGANIZATIONAL MAINTENANCE
ASI "U3" - ARMS OPERATIONS
ASI "U4" - NOT USED AT THIS TIME
ASI "U5" - COMMISSARY OPERATIONS
ASI "U6" - FA WEAPONS MAINTENANCE
ASI "U7" - ECONOMIC CRIME INVESTIGATION
ASI "U8" - COMPUTER OPERATIONS (DAS3/PHOENIX)
ASI "U9" - NON-MORSE OPERATIONS (ICR)
ASI "V1" - AMOSIST SPECIALTY
ASI "V2" - NOT USED AT THIS TIME
ASI "V3" - REMOTE SENSOR SYSTEM MAINTENANCE
ASI "V4" - NOT USED AT THIS TIME
ASI "V5" - MILITARY POLICE INVESTIGATION
ASI "V6" - SPECTROMETRIC OIL ANALYSIS
ASI "V7" - GUIDANCE COUNSELING
ASI "V8" - NOT USED AT THIS TIME
ASI "V9" - COMMUNICATIONS OPERATIONS AND MAINTENANCE (THEATER NUCLEAR FORCES COMMUNICATIONS SYSTEM TERMINAL)
ASI "W1" - NOT USED AT THIS TIME
ASI "W2" - I HAWK SIMULATOR STATION MAINTENANCE (AN/TPQ-29)
ASI "W3" - NOT USED AT THIS TIME
ASI "W4" - INTERCEPT EQUIPMENT MAINTENANCE (AN/FLR-9)
ASI "W5" - NOT USED AT THIS TIME
ASI "W6" - AIRCRAFT SURVIVABILITY EQUIPMENT (ASE)
ASI "W7" - SPECIAL FORCES UNDERWATER OPERATIONS
ASI "W8" - SPECIAL FORCES MILITARY FREE FALL OPERATIONS
ASI "W9" - SPECIAL FORCES MILITARY FREE FALL OPERATIONS AND UNDERWATER OPERATIONS
ASI "X1" - ADVANCED ATTACK HELICOPTER MAINTENANCE
ASI "X2" - DENTAL HYGIENE SPECIALTY
ASI "X3" - TACFIRE REMOTE TERMINAL OPERATION
ASI "X4" - NOT USED AT THIS TIME
ASI "X5" - RADAR MAINTENANCE (FIREFINDER)
ASI "X6" - COMMUNICATIONS MAINTENANCE (TSCE/KG-45)
ASI "X7" - FAAR ORGANIZATIONAL MAINTENANCE
ASI "X8" - COMSEC SYSTEM MINTENANCE (SRA)
ASI "X9" - GENERAL COMSEC MAINTENANCE (SRA)
ASI "Y1" - TRANSITION (INCOMING)
ASI "Y2" - TRANSITION (OUTGOING)
ASI "Y3" - NOT USED AT THIS TIME
ASI "Y4" - SIGNAL SEARCH AND DEVELOPMENT (ADVANCED MORSE)
ASI "Y5" - TEMPEST INSPECTION
ASI "Y6" - CARDIAC CATHETERIZATION SPECIALIST
ASI "Y7" - STERILE PHARMACY SPECIALTY
ASI "Y8" - ALLERGY-CLINICAL IMMUNOLOGY SPECIALTY
ASI "Y9" - MOSAN/TMD 31 UNIT MAINTENANCE
ASI "Z1" - AERIAL OBSERVATION (SCOUT)
ASI "Z2" - MOBILE MESSAGE SWITCHING CENTER OPERATION
ASI "Z3" - LANCE ORGANIZATIONAL MAINTENANCE
ASI "Z4" - HELICOPTER AVIONIC MAINTENANCE (BLACKHAWK UH-60A)
ASI "Z5" - ENLISTED AIDE
ASI "Z6" - EXPLOSIVE DETECTOR DOG HANDLING
ASI "Z7" - TELEMETRY INTERNALS ANALYSIS
ASI "Z8" - ADVANCED ELINT COLLECTION AND ANALYSIS
ASI "Z9" - COMMUNICATIONS MAINTENANCE (U-3002 AND AN/TTC-35)

LANGUAGE CODES

AA AFRIKAANS
AB ALBANIAN
AC AMHARI
AD ARABIC (MODERN STANDARD)
AE ARABIC-EGYPTIAN
AG ADIGEY
AJ ARABIC-CLASSICAL
AK JORDANIAN
AL ARABIC-LIBYAN
AM ARABIC-MAGHREBI
AN ARABIC-SAUDI
AP ARABIC-SYRIAN
AQ ARABIC-LEBANESE
AR ARMENIAN
AU ARABIC-YEMENI
AV ARABIC-SUDANESE

SPECIAL SKILL IDENTIFIER (SSI)

CHARACTER "A" - TECHNICAL INTELLIGENCE
CHARACTER "B" - UNIT RACE RELATIONS DISCUSSION LEADER
CHARACTER "C" - CHEMICAL, BIOLOGICAL, & RADIOLOGICAL (CBR)
CHARACTER "D" - CIVIL AFFAIRS OPERATIONS
CHARACTER "E" - NORTHERN WARFARE EXPERT
CHARACTER "F" - FLYING STATUS
CHARACTER "G" - RANGER
CHARACTER "H" - INSTRUCTOR
CHARACTER "I" - INSTALLER
CHARACTER "J" - SELF-CONTAINED UNDERWATER BREATHING APPARATUS (SCUBA)
CHARACTER "K" - LOGISTICS NCO
CHARACTER "L" - LINGUIST
CHARACTER "M" - FIRST SERGEANT
CHARACTER "N" - JOINT PLANNER
CHARACTER "O" - NO SPECIAL QUALIFICATIONS
CHARACTER "P" - PARACHUTIST

ASI "K6"	-	NON-MORSE COLLECTION/OPERATIONS (SENIOR)
ASI "K7"	-	JOINT TACTICAL COMMUNICATIONS (TRI-TAC) SYSTEMS OPERATION SUPERVI
ASI "K8"	-	COMMUNICATIONS MAINTENANCE (AN/FTC-31 SLVAC)
ASI "K9"	-	COMMUNI[illegible] INTERCEPT OPERATIONS (UHF/VHF)
ASI "L1"	-	SATELL[illegible] TEM EQUIPMENT MAINTENANCE (AN/MSC-46)
ASI "L2"	-	NOT US[illegible] HIS TIME
ASI "L3"	-	NOT USED [illegible] THIS TIME
ASI "L4"	-	NOT USED AT THIS TIME
ASI "L5"	-	NOT USED AT THIS TIME
ASI "L6"	-	SATELLITE SYSTEM EQUIPMENT MAINTENANCE (AN/TSC-86)
ASI "L7"	-	SATELLITE EQUIPMENT MAINTENANCE AN/TSC-54)
ASI "L8"	-	TANK REPAIR (M1)
ASI "L9"	-	SHILLELAGH REPAIR
ASI "M1"	-	COMMUNICATIONS MAINTENANCE OPERATIONS (MTECH)
ASI "M2"	-	COMMUNICATIONS MAINTENANCE (MODE V SUBSCRIBER TERMINAL EQUIPMENT)
ASI "M3"	-	DIALYSIS SPECIALTY
ASI "M4"	-	BLOOD GROUPING COLLECTING AND PROCESSING
ASI "M5"	-	ABRAMS/BRADLEY FIGHTING VEHICLE MAINTAINER
ASI "M6"	-	COMPUTER OPERATIONS/DAS3
ASI "M7"	-	NON-MORSE ANALYSIS (INTERMEDIATE)
ASI "M8"	-	EQUIPMENT OPERATION/MAINTENANCE (TENCAP/MAGIIC)
ASI "M9"	-	EMITTER LOCATION AND IDENTIFICATION (SENIOR)
ASI "N1"	-	NOT USED AT THIS TIME
ASI "N2"	-	NOT USED AT THIS TIME
ASI "N3"	-	CIRCUIT CONDITIONING
ASI "N4"	-	COMMUNICATION OPERATIONS AND MAINTENANCE (EMERGENCY ACTION CONSOLE)
ASI "N5"	-	IATS SYSTEMS OPERATIONS AND MAINTENANCE
ASI "N6"	-	LITOS COLLECTION & PROCESSING SYSTEM (AN/FSQ-88(V)) MAINTENANCE
ASI "N7"	-	STRATEGIC DEBRIEFING & INTERROGATION
ASI "N8"	-	UROLOGY SPECIALIST
ASI "N9"	-	NOT USED AT THIS TIME
ASI "P1"	-	AN/FSC-78 SATELLITE COMMUNICATIONS SET OPERATIONS/MAINTENANCE
ASI "P2"	-	AN/TTC-38 AUTOMATIC TELEPHONE CENTRAL OFFICE MAINTENANCE
ASI "P3"	-	AN/TYC-39 AUTOMATIC MESSAGE SWITCHING CENTRAL MAINTENANCE
ASI "P4"	-	AN/GSC-49 SATELLITE COMMUNICATIONS TERMINAL EQUIPMENT
ASI "P5"	-	NOT USED AT THIS TIME
ASI "P6"	-	ARMY COMMUNITY SERVICES
ASI "P7"	-	NARCOTICS DRUG DOG DETECTOR HANDLING
ASI "P8"	-	NOT USED AT THIS TIME
ASI "P9"	-	NOT USED AT THIS TIME
ASI "Q1"	-	GROUND MOBILE FORCES (GMF) CONTROLLER
ASI "Q2"	-	ALSE SUPPORT
ASI "Q3"	-	SWITCHING CENTER SUPERVISION (AUTODIN)
ASI "Q4"	-	NOT USED AT THIS TIME
ASI "Q5"	-	NOT USED AT THIS TIME
ASI "Q6"	-	NOT USED AT THIS TIME
ASI "Q7"	-	NOT USED AT THIS TIME
ASI "Q8"	-	TACTICAL AIR OPERATIONS
ASI "Q9"	-	TRAFFIC ACCIDENT INVESTIGATION
ASI "R1"	-	TELETYPEWRITER MAINTENANCE (AN/FGC-158)
ASI "R2"	-	UNINTERRUPTABLE POWER SUPPLY REPAIR
ASI "R3"	-	NOT USED AT THIS TIME
ASI "R4"	-	HEAVY EXPANDED MOBILITY TACTICAL TRUCK (HEMTT) OPERATIONS
ASI "R5"	-	INERTIAL NAVIGATION SET MAINTENANCE (AN/ASN-86)
ASI "R6"	-	NOT USED AT THIS TIME
ASI "R7"	-	NOT USED AT THIS TIME
ASI "R8"	-	TANK OPERATION/ORGANIZATIONAL MAINTENANCE (M551 SHERIDAN)
ASI "R9"	-	COMMUNICATIONS MAINTENANCE (STRAWHAT)
ASI "S1"	-	ELECTRONIC SWITCHING SYSTEM REPAIR (INTERMEDIATE)
ASI "S2"	-	MECHANICAL EQUIPMENT MAINTENANCE (POWER STATION)
ASI "S3"	-	ELECTRICAL EQUIPMENT MAINTENANCE (POWER STATION)
ASI "S4"	-	INSTRUMENT MAINTENANCE (POWER STATION)
ASI "S5"	-	NOT USED AT THIS TIME
ASI "S6"	-	NOT USED AT THIS TIME
ASI "S7"	-	SECURE COMMUNICATIONS EQUIPMENT MAINTENANCE (SCOPE SAFE)
ASI "S8"	-	MULTIPLE LAUNCH ROCKET SYSTEM ORGANIZATIONAL MAINTENANCE
ASI "S9"	-	DEFENSE SENSOR INTERPRETATION & APPLICATION TRAINING PROGRAM (DS
ASI "T1"	-	SWITCHING EQUIPMENT MAINTENANCE (OVERSEAS AUTOVON)
ASI "T2"	-	TELETYPEWRITER MAINTENANCE (MOD 40 TTY)
ASI "T3"	-	COMPUTER OPERATIONS (GE600/HONEYWELL 6000)
ASI "T4"	-	NOT USED AT THIS TIME
ASI "T5"	-	PATRIOT INTERMEDIATE LEVEL MAINTENANCE
ASI "T6"	-	ELECTROENCEPHALOGRAPH SPECIALTY (EEG)
ASI "T7"	-	INTERIM THEATER ADPE SERVICE CENTER (ITASC) REPAIRER
ASI "T8"	-	DIVISION SUPPLY ACCOUNTING (DS4/DIRECT SUPPORT UNIT STANDARD SUPPLY SYSTEM)

BT	BALUCHI
BU	BULGARIAN
BM	ARABIC-TUNISIAN
	BURMESE
	CAMBODIAN
	CHINESE-CANTONESE
CU	SOUTH MIN
CF	CHINESE-FUKIENESE
CJ	GUARANIAN
CM	CHINESE-MANDARIN
CW	TIUNG
CX	CZECHOSLOVAKIAN
DA	DANISH
DG	ARABIC-IRAQI
DU	DUTCH
DW	DUTCH-CREOLE
FJ	FINNISH
FL	FLEMISH
FM	FORMOSAN
FR	FRENCH
GM	GERMAN
GR	GREEK
HE	HEBREW
HU	HUNGARIAN
JA	JAPANESE
JN	INDONESIAN
JT	ITALIAN
KP	KOREAN
LA	SPANISH-AMERICAN
LE	LATVIAN
LT	LITHUANIAN
NR	NORWEGIAN
PF	PERSIAN-FARSI
PG	PERSIAN-AFGHAN
PL	POLISH
PQ	PORTUGUESE-BRAZILIAN
PT	PORTUGUESE-EUROPEAN
PU	PUSHTU
PV	PUSHTU-AFGHAN
PW	PUSHTU-PESHAWARI
QB	SPANISH-CARIBBEAN
QE	ARABIC (EASTERN)
RQ	ROMANIAN
RU	RUSSIAN
SA	SAMOAN
SC	SERBO-CROATIAN
SM	SOMALI
SR	SPANISH-CASTILIAN
SW	SWAHILI
SY	SWEDISH
TA	TAGALOG
TH	THAI
TU	TURKISH
UR	URDU
VC	VIETNAMESE-CENTRAL
VN	VIETNAMESE-HANOI
VS	VIETNAMESE-SAIGON
YJ	YIDDISH
ZZ	LANGUAGE UNSPECIFIED (BUT REQUIRED)

CHARACTER "S"	-	[illegible]
CHARACTER "T"	-	NOT USED AT THIS TIME
CHARACTER "U"	-	NOT USED AT THIS TIME
CHARACTER "V"	-	RANGER-PARACHUTIST
CHARACTER "W"	-	PSYCHOLOGICAL WARFARE (DU [illegible] OCT 85)
CHARACTER "X"	-	DRILL SERGEANT
CHARACTER "Y"	-	PATHFINDER
CHARACTER "Z"	-	ALCOHOL AND DRUG ABUSE PREVENTION AND CONTROL PROGRAM
CHARACTER "1"	-	NOT USED AT THIS TIME
CHARACTER "2"	-	TRAINING DEVELOPMENT
CHARACTER "3"	-	ORGANIZATIONAL EFFECTIVENESS
CHARACTER "4"	-	NON CAREER RECRUITER
CHARACTER "5"	-	NOT USED AT THIS TIME
CHARACTER "6"	-	NOT USED AT THIS TIME
CHARACTER "7"	-	NOT USED AT THIS TIME
CHARACTER "8"	-	NOT USED AT THIS TIME
CHARACTER "9"	-	NOT USED AT THIS TIME

AR 611-201 REFERENCE DATA

CAREER MANAGEMENT FIELD (CMF) LISTING	SEE SEC I, CHAPTER 2
SPECIALIZED DUTY FUNCTIONS	SEE CHAPTER 3
SPECIFIC MOS/SQI DATA PERTAINING TO FIELDS CLOSED TO WOMEN	SEE CHAPTER 4
ASI LISTING BY ASI CODE	SEE TABLE 6-1
REFERENCE PUBLICATIONS	SEE APPENDIX A
MOS PHYSICAL PERFORMANCE TASKS	SEE APPENDIX B

FOR ADDITIONAL COPIES OF CHART PLEASE WRITE:

COMMANDER
US ARMY SOLDIER SUPPORT CENTER-NCR
ATTN: ATZI-NOT-A
200 STOVALL STREET
ALEXANDRIA, VIRGINIA 22332-0400

REFER TO AR 611-201 FOR ACCURACY OF INFORMATION

TABLE 4. Enlistment Incentives Utilized For Cluster #1 By Year

ODCSPER SHOWS NEARLY 2000

Incentive type	FY1981	FY1982	FY1983	FY1984	All 4-Years
(1) 2-yr ACF only	WRONG 327	2,740	3,999	3,725	10,791
		SEVERAL THOUSAND			
(2) 3-yr ACF only	WRONG 198	1,382	1,754	1,468	4,802
(3) 4-yr ACF only	6	87	30	15	138
(4) Low EB only	241	84	43	2	370
(5) High EB only	4,527	659	176	39	5,401
(6) 3-yr ACF + $4.0K EB	WRONG 52?	203	639	722	1,616
(7) 4-yr ACF + $1.5K EB	32	103	93	87	315
(8) 4-yr ACF + $2.0K EB	0	0	5	67	72
(9) 4-yr ACF + $2.5K EB	121	187	114	164	586
(10) 4-yr ACF + $3.0K EB	241	35	149	21	446
(11) 4-yr ACF + $3.5K EB	246	941	831	855	2,873
(12) 4-yr ACF + $4.0K EB	802	0	352	648	1,802
(13) 4-yr ACF + $4.5 EB	0	0	0	5	5
(14) 4-yr ACF + $5.0K EB	1,561	8,767	8,031	6,747	25,106
(15) 4-yr ACF + $6.0K EB	0	0	0	662	662
(16) 4-year ACF + $7.0K EB	0	0	0	0	0
(17) 4-year ACF + $8.0K EB	0	499	5,182	3,147	8,828

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Working Paper

MPPRG WP85-10

OCCUPATIONAL CHOICE OF HIGH SCHOOL GRADUATES: THEORY AND MODEL SPECIFICATION

by

Donald Cox

May 1985

U.S. Army Research Institute
for the Behavioral and Social Sciences
5001 Eisenhower Avenue, Alexandria VA 22333

Chapter 1

Introduction and Background Information

1. Introduction and Statement of Research

With the inception of the All Volunteer Force in 1973, a considerable amount of research has been devoted to the study of military enlistment supply. For the most part, however, this research has been limited to the analysis of aggregate level data of a predominately economic nature. The present research consists of an empirical analysis of the determinants of enlistment and differs in both the type of data and analytical approach from most of the previous work in this area.

The purpose of this chapter is informational. The following section provides a description of the present analysis. Sections 2 and 3 respectively provide background information on the current Armed Force and previous research on enlistment supply. The last section is reserved for an outline of the remaining chapters.

1.1. Statement of Research

While the analysis of aggregate level data has proved useful in forecasting enlistment supply,[1] it has not been able to provide the needed insight into the actual determinants of the enlistment decision. The present analysis utilizes a micro level longitudinal data base drawn from the National Longitudinal Survey of Youths, 1979-1981, that is rich in economic, sociological, psychological and demographic information about the potential enlistee. By the use of such data, specific hypotheses of enlistment, as well as other occupational choices, can be tested. A potential limitation of the present research is that, unless the sample size is sufficiently large to permit disaggregation by service, the analysis will not be service specific.

1.1.1. Hypotheses

i.) The role of socio-psychological and family-demographic characteristics in the enlistment decision: These characteristics include motivation, parental education levels, the number of family members currently serving in the military, family attitudes toward the military, marital status, the number of dependents and other characteristics that could be important to the enlistment decision.

ii.) The role of economic attributes in the enlistment decision: Previous studies have utilized average economic attributes. These attributes are rather imprecise in explaining and predicting individual behavior. The present anlaysis will include economic measures that are more individual-specific. This will allow the testing of how acquired human capital, civilian wages (actual and expected), individual-relevent unemployment rates and the ability to finance a college education impact on the enlistment decision.

iii.) The impact of recruitment activities on the enlistment decision: Prior analysis on this aspect of the enlistment decision has met with limited success. This could have been due to imprecise instruments, insufficient variation in the explanitory variables, or model misspecification. In the current analysis, recruitment activity will be measured by individual contact with a recruiter, advertising expenditure (location specific), and recruiter density.

1.2. Analytical Approach

The analytical approach consists of the estimation of a mixed discrete/continuous simultaneous equations model of occupational status for male high school graduates one year after receiving a high school diploma or General Education Diploma (G.E.D.). The occupational status choice set consists of three possibilities: civilian employment, college enrollment or military service. The sample selection criteria is based upon several considerations. First, during the period of analysis (1979-1981), high school graduates can be viewed as unconstrained by demand considerations. Secondly, allowing one year to transpire before observing the individual's occupational status permits a more accurate assessment of the individual's initial career decisions. Lastly, this sample specification will simplify the analysis by excluding occupational switching, which would complicate the analysis if the individual was tracked for more than one year.

A major problem with qualitative choice models is sample selectivity bias. Various techniques have been developed to correct for this bias for binary choice models. However, very limited work has been done to extend these correction procedures to the trichotomous case. The present analysis will include a trichotomous correction procedure that is based upon the work of Lee (1982).

1.3. Data

The data base will consist of a sub sample of approximately 2,000 observations from the National Longitudinal Survey of Youth, 1979-1981. Approximately 650 of these observations are enrolled in college, 230 are enlisted in the military, and 1,180 are employed in civilian sector jobs. This sub sample will be augmented with locational specific information on economic conditions and recruitment related activities. The military data will be drawn from the Defense Manpower Data Center's Enlistment Master Files.[2]

2. Background Information on the All Volunteer Force

The current commitment to an All Volunteer Armed Force is not an unique experience in united states history. Rather, historically, U.S. Armed Services have satisfied their manpower requirements from volunteers. Only during periods of national emergency has this country turned to a policy of forced conscription to satisfy these unexpected manpower requirements. What is unique about the current force is its' size. In particular, the current force is approximately five times the size of the pre-World War II force (the last pre-draft era force).[3]

The first serious movement towards the re-institution of an all volunteer force came in 1969 with President Nixon's appointment of the Gates Commission. The resulting commission report recommended a return to an all volunteer force accompanied by an increase in military wages, improved recruiting activities and the establishment of a standby draft system.[4] Almost three years were to elapse before the then Secretary of Defence, Mr. Melvin Laird, was to announce the end of the draft in January 1973.

Since the return to the policy of voluntary enlistment, the force has been periodically subjected to critical commentary about its' continuing viability.[5] Typically, these comments consist of whether the force has satisfied its' recruitment objectives, will continue to satisfy these objectives, the quality of the recruits, and how representative the recruits are of the general potential recruit population. Actual recruiting performance has lent mixed support to these comments. Table 1-1 provides a breakdown of actual recruiting trends for the Army. Army data is reported because, out of the four services, the Army has had the most difficulty in achieving its' recruitment objectives.[6]

Table 1-1: Army Recruiting Trends (non-prior service enlistments)

Fiscal Year	% of Manpower Obj. Filled (1)	% High Sch Graduates (2)	% High Sch Grads/Pop % HS Grad (3)	% MCAT I-IIIA (4)	% Black (5)	% Blk/ % Blk Pop (6)
1974	98.7	50.1	0.66	52.5	27.2	2.39
1975	100.4	57.8	0.78	57.6	23.0	2.00
1976	100.1	58.6	0.79	54.8	24.4	2.12
1977	100.3	59.2	0.80	34.2	29.4	2.53
1978	97.7	73.7	0.99	37.9	34.3	2.93
1979	86.7	64.1	0.87	30.6	36.8	3.12
1980	100.2	54.3	0.75	26.0	29.8	2.53
1981	101.0	80.3	1.11	40.0	27.4	2.32
1982	104.1	86.0	*	53.0	24.6	2.07
1983	100.3	87.6	*	61.4	22.0	*

* Data not available.

Sources by column number:

(1), (2), (4), (5) : Data provided by S. Castledine, DAPE-MPA-EA.

(3) : Pop % HS Grad refers to the % of 18 year olds that are high school graduates. The Statistical Abstracts of the United States: 1984, Table No. 255, pp. 160, Dec 1983.

(6) : The Statistical Abstracts of the United States: 1984, Table No. 32, pp. 32, Dec 1983 (for years 1979-1982). Data for 1974-1978 from The Statistical Abstracts of the United States: 1979, Table No. 27, pp. 28, Sept 1979.

The first column of Table 1-1 illustrates that, except for Fiscal Years (FY) 1978-1979, the Army has been able to satisfy its' recruiting objectives. Two measures of recruit quality are reported in columns 2 and 4. With the exception of FY1979 and FY1980, the Army has been increasingly able to attract a higher proportion of high school graduates. To control for general population trends in educational attainment, the ratio of high school graduate recruits to 18 year old high school graduates is reported in column 3. The data in this column indicates that the Army had a below average proportion of high school recruits for FY1974-FY1980. However, even though data for population high school graduates in the most recent years is unavailable, an overall trend towards a higher proportion of high school graduates can be seen. Information on recent recruiting performance has tended to support this trend.[7]

A second indicator of recruit quality is given by the percentage of recruits that are classified into Mental Categories (MCAT) I-IIIA. Mental category classification is based upon the test score results of the Armed Forces Qualification Test (AFQT). The AFQT is a four part examination that is used to predict the trainability of the potential recruit. Individuals who score in the upper 50 percent fall into the I-IIIA categories and are considered to be above average in quality. The apparent decline in the precentage of recruits falling into these categories for FY1977-FY1980 is partially attributed to a renorming of the AFQT score results in 1980. For the years 1976 to 1980, the AFQT test score results were incorrectly normalized on a 1944 population. The renormalization of these scores to a more relevent population resulted in an increase in the number of lower Mental Category recruits.[8] The years following the renorming indicate an increase in the percentage of MCAT I-IIIA recruits.

A third common critical comment periodically directed to the Force is that it is disproportionately manned by minorities.[9] The information in columns 5 and 6 tend to support this, particularily for the late 1970's. Since FY1979 however, the trend has been towards a proportionate representation of blacks in the military.

In general, the information in Table 1-1 indicates that the Army has been able to attract a sufficient number of recruits, while upgrading the quality of these recruits (particularily in the most recent years). The ability of the Army, and the Armed Forces in general, to maintain this trend in the coming years is not that certain. Figure 1-1 illustrates that projected demographic trends are unfavorable to these goals. In addition, in the face of favorable changes in economic conditions these recruitment trends may become difficult to maintain.

3. A Brief Discussion on Prior Research

The majority of research on enlistment supply has been of an empirical nature. What follows is a brief discussion of the theoretical underpinnings and major empirical findings in this area.[10]

3.1. Theoretical Background

The economic theory of military enlistments is dominated by supply side utility maximization principles.[11] The lack of demand side analysis is largely attributed to the perculiar characteristics of military enlistment demand. As stated by Brown (1984), "... the Armed Forces are neither pure price takers nor pure quantity takers. Rather, they attempt to fill a predetermined number of positions at a predetermined wage, with recruit quality varying to equate supply and demand."[12] This implies that recruits that are deemed high quality (ie - in Mental Categories I-IIIA) are not demand constrained and, given the number of high quality recruits, the residual number of lower quality recruits are determined via a more standard market clearing process.

The theory of enlistment supply was first explicitely discussed by Oi (1967) and Fisher (1969). Simply stated, the theory predicts that an individual will enlist if military monetary compensation exceeds the sum of civilian monetary compensation and taste (distaste) for military service. Or, using Fisher's notation, the individual will enlist if

(1) $W_m > W_c (1 + d)$,

where W_m and W_c are the respective military and civilian income streams (discounted to present value) and d is a measure of taste (distaste) for military service.

This basic framework has been the foundation for most of the empirical work in this area. Subsequent researchers have focussed on the more technical aspects of model specification and econometric estimation.[13]

3.2. Empirical Highlights

Previous empirical analyses can be characterized by two criteria: 1.) Aggregate or individual (micro) level data and 2.) time-series or cross-sectional analysis. With the exception of Brown (1984), Jehn and Shughart (1977), Ellwood and Wise (1984) and Daula and Smith (1984), all of the aggregate level studies have also been time-series. A summary of the major characteristics and findings of these studies is presented in Table 1-2. The studies covered in this summary should not be considered exhaustive of the work done in this area, but merely representative.[14] This section will briefly discuss some of the highlights of these studies. These highlights are classified as being either economic, recruiter or demographic related.

3.2.1 Economic Findings

The two major economic issues relevent to enlistment supply are the effects of wages (directly) and unemployment (both directly and indirectly). Most of the studies have found significant and positive (negative) military (civilian) wage effects. The range of estimated wage elasticities, however, is quite large. This is partially attributed to the branches studied, specification of the wage variable, period of analysis, and stratification of the data by race and/or recruit quality.

While these estimates range from very inelastic (Ash, Udis and McNown) to rather elastic (Dale and Gilroy, Baldwin, et. al. and Daula, et. al.); several underlying trends have been found. First, almost all of the studies that included race effects found higher wage elasticities for whites vs blacks.[15] In addition, those individuals deemed high quality exhibited larger wage elasticities than lower quality individuals.[16]

The estimated effects of civilian labor market unemployment have been somewhat less consistent. One would expect significant unemployment rate effects.[17] For most of these studies this is not the case. Rather, the estimated effect has been insignificant and/or wrong signed and sensitive to changes in the functional form. In the studies that found statistically significant effects, the elasticities have been generally quite low. Comparisons across race and recruit quality have resulted in fairly consistant differences in effects. Blacks were less sensitive to unemployment effects than whites. High quality recruits were more sensitive to the unemployment rate than lower quality recruits.

A third economic relevent issue is the effectiveness of various military college assistance programs. These programs were the GI Bill (up to 1977) and the Veterans Educational Assistance Program (from 1977 to the present).[18] Only Dale and Gilroy (1983a,1983b), Brown (1984) and Daula and Smith (1984) have empirically tested the effectiveness of these programs.[19] With the exception of Daula and Smith (1984),[20] the finding of these studies generally indicate that these programs have been successful in attracting recruits. Brown's results are particularily surprising because the estimated effect of the VEAP was larger than that of the military wage.[21]

3.2.2 Recruitment Effects

Recruitment activities consist of advertising and recruiter effort. The analysis of the effectiveness of these activities, while important to military manpower planners, has yielded generally inconclusive results. Most studies have found neglible and/or statistically insignificant recruiter effects. The extreme case is Daula, Fagan and Smith (1982) who found statistically significant, but negative recruiter impacts.[22] The most consistantly significant (over model specification) estimates are those of Brown (1984), Detrouzos (1984), Goldberg (1980), Jehn and Shughart (1977) and Horne (1984).

Dale and Gilory (1983b) found insignificant results when measuring recruiter effectiveness by the number of production recruiters. However, by using a dummy variable approximation for recruiter effort, a significant positive relationship was discovered.

Brown (1984), Daula and Smith (1984), Goldberg (1980) and Horne (1984) included advertising measures. Brown (1984) and Goldberg (1980) had generally nonsignificant findings. Brown used both local and national advertising expenditures. His results indicated that, at best, only national advertising had a positive and significant effect. However, this result was not consistant across equations. Local advertising had no discernible effect. Goldberg (1980) also found consistantly insignificant effects across samples and functional form.

Daula and Smith (1984) and Horne (1984) had somewhat better success. Both of these studies included national and local advertising measures. Daula and Smith (1984) found both of these measures to be positive and significant. In addition, national advertising (measured by potential exposure time) was found to have a consistantly greater effect than local advertising expenditures. Horne (1984) had simmilar results for national advertising, but local advertising was found to be insignificant.

3.2.3 Demographic effects

The only demographic effects used in the time-series studies consisted of the estimation of different equations for blacks and whites. The results generally indicate a lower sensitivity to changes in wages and unemployment rates for blacks compared to whites.

The cross-sectional and pooled studies were able to introduce additional demographic measures due to the variation in demographic characteristics between individuals and/or local regions. Daula, Fagan and Smith (1982) and Baldwin, Daula and Fagan (1982) were the only studies to utilize individual level data. The variables that these studies used, however, were restricted to locational and marital status dummy variables. Their significant finding is that individuals from the north-central part of the country had a higher probability of enlisting than individuals from other regions.

Jehn and Shughart (1977), used average demographic characteristics of the recruiting district. Their results indicate that districts with a higher median education level and a lower per capita income level have a higher rate of enlistment.

4. Outline of Chapters

The remainder of this research is organized into four chapters. The following chapter will present a model of occupational choice, as applied to military enlistment. The relevent econometric issues and empirical hypotheses will also be discussed in this chapter.

The data that will be used for the empirical analysis comes from several sources. The third chapter is used to describe how the data set was constructed. In order to generate a "feel" for the data, various descriptive statistics will be presented.

The empirical results will be presented in the fourth chapter. These results will then be compared with earlier research findings. A summary of the empirical results and a discussion of potential future research is given in the last chapter.

End Notes

1.) For example see Dale and Gilroy (1983a, 1983b), Fernandez (1979) and Horne (1984).

2.) See chapter 3 for a description of this data.

3.) For more detailed background information on the current volunteer force see Janowitz and Moskos (1979) and Bachman, Blair and Segal (1977).

4.) See The Report of the President's Commission on an All-Volunteer Force (1970), pps.

5.) For example see Binkin (1984) or Janowitz and Moskos (1979).

6.) See Holden (1980).

7.) See the Washington Post, Dec 9, 1984

8.) See Office of the Assistant Secretary of Defence/Manpower, Reserve Affairs, and Logistics (1980) or Shields and Grafton (1983) for a discussion of the misnorming problem.

9.) See Binkin (1982).

10.) For a more extensive review see Morey and McCann (1983).

11.) Notable exceptions are DeVany and Saving (1982), Detrouzos (1984), Ellwood and Wise (1984) and Daula and Smith (1984).

12.) Pp. 4.

13.) These issues include the specification of the dependent va variable (accessions vs contracts signed), the appropriate independent variable lag structure(s) and the appropriate model estimation technique. See Brown (1984), pps. 3-11, for a discussion of the first two types of issues.

14.) For additional examples of empirical work in this area see Altman and Fechter (1967), Amey, Fechter, Grissmer and Sica (1976), Burton (1970), Dale and Gilroy (1984), Goldberg and Greenston (1983), Hosek and Peterson (1984), Kim (1982), Kim, Farrell and Clague (1971), McNown, Ash and Udis (1980), and Withers (1979).

15.) See Dale and Gilroy (1983a, 1983b) and Ash, Udis and McNown (183).

16.) See Ash, Udis and McNown (1983), Dale and Gilroy (1983a, 1983b) and Grissmer (1977).

17.) This is supported in a survey of Army enlistee by Elig, Gade and Shields (1982). The results of this survey indicate that over 40 percent of enlistees mentioned that unemployment was a factor in the decision to enlist.

18.) See Fernandez (1980) or Huck, Kusmin and Shepard (1982) for a discussion of these programs.

19.) Ellwood and Wise (1984) used Brown's formulation of education benefits but dropped it due to anamalous results (pp. 14).

20.) Daula and Smith (1984) found, in all but one equation, insignificant VEAP effects. The only statistically significant estimate indicated that the VEAP had a negative effect on high quality recruits. They did find, however, that the Army College Fund (which augmented the basic VEAP as of 1982) had a positive and statistically significant effect across all types of recruits.

21.) See Brown (1984), Tables 2 and 3.

22.) DeVany and Saving (1982) found similar results. However, they did find that recruiters had a positive effect on the quality of the recruit.

CHAPTER 2

Occupational Choice of High School Graduates: Theory and Model Specification

1. Introduction

The purpose of this chapter is to present a micro economic model that will be utilized in the analysis of Armed Forces enlistment determinants. This model will be based upon the theory of random utility. A general occupational choice model is presented in the following section. Section 3 will apply this model to a three choice setting, which is the basis of the empirical analysis.

There are several econometric issues that must be addressed in this analysis. These issues will be discussed in section 4. The empirical model will be specified in section 5. The last section is reserved for a chapter summary.

2. A General Model of Occupational Choice

The decision to choose a particular occupation from a vector of possible occupations will be analyzed is a standard utility maximization framework. The individual is assumed to face a vector of occupational possibilities for any particular point in time. In addition, it is assumed that each of these occupational possibilities has an associated set of monetary and non-pecuniary attributes. The individual's problem consists of selecting the occupation that maximizes the lifetime returns to these attributes. For the ith individual, this is given as

$$(1) \qquad \max U^i = U^i(Y_k, X_k), \text{ for } k = 1,2,\ldots,K,$$

where X_k is a vector of non-pecuniary attributes for each occupation k and Y_k is the discounted present value of the monetary returns to this occupation.

Individual tastes are assumed to play a large role in the valuation of the returns to the various occupational possibilities. In particular, it is assumed that tastes affect the individual's valuation of the non-pecuniary attributes of the occupational alternatives. However, tastes are assumed to not affect the individual's valuation of income from each of the possibilities (ie - a dollar is a dollar). All that this implies is that, given identical income streams between two or more alternatives, the individual will choose the occupation with the highest valuation of the non-pecuniary attributes. This taste effect is explicitely incorporated into the model by rewriting equation (1) as

$$(2) \quad \max \quad U^i = U^i(Y_k,\ X_k;\ Z^i),$$

with $\partial U^i/\partial Y_k > 0$, $\partial U^i/\partial X_k \gtrless 0$ and $\partial U^i/\partial Z^i \gtrless 0$. Individual attributes and tastes are represented by the vector Z^i. While individual attributes can be observed, usually tastes cannot. The introduction of these unobservable tastes into the model transforms the utility function into a stochastic function. This is seen by assuming that equation (2) can be decomposed into a function that is seperable in the observable non-stochastic elements and the unobservable stochastic elements. This decomposition is given as

$$(3) \qquad U^i = U_1^i(Y_k,\ X_k;\ Z^i) + U_2^i(X_k; Z^i),$$

where $U_1^i(\ )$ represents the observable non-stochastic components of U^i and $U_2^i(\ )$ represents the unobservable stochastic components.

This particular formulation of the utility function is an example of what is referred to in the literature as a random utility model. First introduced by Thurstone (1927)[1], this formulation of utility has proven useful for analysis of a variety of qualitative choice problems.[2] It is used in this analysis as it presents a convenient and realistic framework for the analysis of occupational choice.

The assumed distribution of the stochastic elements in equation (3) will become important for the choice of econometric specification to be utilized for the model estimation. This will be covered in section 4. For the present discussion, no assumptions will be made as to the explicit distribution of these elements. Rather, this exposition will proceed on a more general level.

Now consider the choice of a particular occupation j out of the set of possible occupations. For all occupations $k \neq j$, j will be selected if and only if $U^i_j > U^i_k$. Or, in the framework of equation (3), j will be selected if and only if

$$(4) \quad U^i_1(Y_j, X_j; Z^i) + U^i_2(X_j; Z^i) >$$

$$U^i_1(Y_k, X_k; Z^i) + U^i_2(X_k; Z^i), \text{ for all } k \neq j.^3$$

By rearranging terms and simplifying the notation, equation (4) is expressed as

$$(5) \quad (U^i_{1j} - U^i_{1k}) > (U^i_{2k} - U^i_{2j}),$$

where $U^i_{1m} = U^i_1(Y_m, X_m; Z^i)$ and $U^i_{2m} = U^i_2(X_m; Z^i)$, for m = 1,2,..., K. This equation states that only if the observable difference of U^i_{1j} and U^i_{1k} (pecuniary utility) exceeds the unobservable difference of the stochastic elements U^i_{2k} and U^i_{2j} (non-pecuniary utility), will occupation j be selected.

3. Application of the Model to Military Enlistments

The purpose of this section is to apply the general model presented in the previous section to the decision to enlist in the Armed Forces. In order to make some of the econometric aspects of this analysis more tractable, several simplifications will be introduced. First, the occupational choice set will consist of three possible states: civilian employment, full-time education and military service. This simplification is required due to the econometric complexities and data constraints that would result with a more disaggregate choice set.[4] Secondly, the possiblity of occupational switching will not be considered. Rather, this analysis will focus on the occupatinal status of the individual one year after graduation from high school.[5]

In light of these simplifications, the utility associated with the three occupational possibilities is represented as

$$(6) \qquad U^i_k = U^i_1(Y_k, X_k; Z^i) + U^i_2(X_k; Z^i)$$

$$= U^i_{1k} + U^i_{2k} ,$$

where k = 0 for civilian employment,

= 1 for full-time education,

= 2 for military service.

Let P_k^i , k = 0,1,2, represent the probability of observing the selection of occupation k for the ith individual. The probability of observing an enlistment (k = 2) is given as

$$(7) \qquad P_2^i = \text{prob}(U_2^i > U_1^i \text{ and } U_2^i > U_0^i)$$

$$= \text{prob}(\tilde{U}_{21}^i > W_{12}^i \text{ and } \tilde{U}_{20}^i > W_{02}^i),$$

where $\tilde{U}_{jk}^i = (U_{1j}^i - U_{1k}^i)$ and $W_{jk}^i = (U_{2j}^i - U_{2k}^i)$. According to the specification of this equation, the probability of observing an enlistment is a function of a multiple binary comparison process. An alternative method of representing this probability is via the use of order statistics. Within an order statistic framework the individual is viewed as ranking the returns to the various alternatives from lowest to highest. This implies that a particular occupational choice will be observed only if the returns to that occupation exceed the maximum returns over the set of alternatives. Therefore, the probability of observing an enlistment, as given by equation (7), can be also expressed as

$$(8) \qquad P_2^i = \text{prob}(U_2^i > \max U_k^i \text{ , } k = 0,1).$$

There is little conceptual difference between these two approaches. They both imply the choice of the alternative with the highest associated returns. The only difference consists of how the individual is assumed to compare the alternatives. Regardless of the assumed choice process, the observed outcomes should be identical. There is, however, an econometric advantage to the order statistic approach.[6] Estimation of the model will be subject to a sample selectivity bias. Correction for this bias is far less cumbersome using this approach compared to the multiple binary comparison approach. For this reason the order statistic approach will be employed for the remainder of this analysis.

The next step is to specify the empirical model equations. At this point only a general specification will be presented. Actual variables descriptions and hypotheses for the coefficients will be presented in section 5. In an "ideal" situation the model would consist of 6 equations with an equal number of endogenous variables.[7] This ideal model is given as

(9) $U^{*}_{ik} = \alpha_1 Y_{ik} + Z_{ik} B_k + N_{ik}$ and

(10) $Y_{ik} = X_{ik} \gamma_k + e_{ik}$, for $i = 1,\ldots,N$ and $k = 0,1,2$.

The variables in this ideal system are defined as

U^*_{ik} = the valuation of the returns to alternative k by individual i,

Y_{ik} = the monetary returns to alternative k,

Z_{ik} = a vector of alternative specific and nonalternative specific (personal) attributes,

X_{ik} = a vector of personal and alternative specific attributes,

N_{ik}, e_{ik} = model error terms

α_1, B_k, γ_k = unknown model parameters

Unfortunatelly, in the present analysis, this ideal model cannot be estimated. This is because the expected monetary returns to education (Y_{i1}) is not observed for the sample group. U^*_{ik} also is never observed, but this is not a problem. It can be represented by the assignment of discrete values to a proxy variable, conditional upon the observed occupational choice.

There are several possible methods to create a proxy variable for Y_{i1}.[8] One method consists of estimating the education monetary returns equation with data for individuals who have completed college, discounting the estimated Y_{i1},t+n to the relevent time period, and using the resulting value as a proxy for these expected returns. The problem with this approach is that these estimates will most likely be biased and imprecise. One potential bias of this approach is due to these estimates being based on a sample of individuals that have completed college, whereas those who are still involved in the education process face a non-trivial probability of not completing. Hence, the estimated income would be upwardly biased. In addition, determination of the proper rate of discount and differences in the vector of explanitory variables will further reduce the accuracy of this method.

A second method of approximating Y_{i1} consists of estimating what the individual would have earned if employed in the civilian sector. Assuming that the returns to human capital investment are an increasing function (over the relevent range) of unobservable "ability", this estimate would create a lower bound on Y_{i1}. There are two difficulties with this approach. First, there is no reason to expect "ability" to have a homogeneous impact across options. Rather, it is more reasonable to expect the opposite. This implies that the observed earnings of those who elected not to enroll in college could very well exceed the estimated earnings of those who did, at the date of enrollment. Secondly, the proper context to view the monetary returns to education is within the individual's lifetime. Therefore, even if "ability" was homogeneous, a cross-sectional analysis, at the time of enrollment, would have difficulty capturing these returns. This discussion leads to the conclusion that use of either of these approximations may create more problems than solutions.

Therefore, the expected monetary returns to education equation will not be estimated and Y_{i1} will also be excluded from the respective selection equation.

There are two remaining steps that are necessary prior to model estimation. The first consists of the choice of econometric model specification. This will be done in the following section. The second consists of the equation variable selection. This will be presented in section 5.

4. Econometric Issues

The model given by equations (9) and (10) can be characterized as a mixed continuous/discrete model. There are three econometric issues that must be addressed prior to estimation of this model. These issues are the choice of econometric model specification, correction for selectivity bias, and the correction of choice based sampling bias. The choice of model specification will be considered first. Then, given the chosen specification, the selectivity and choice based bias issues will be addressed in the following sub-sections.

4.1. Econometric Model Specification

In general there are three widely used model specifications for the estimation of qualitative response models. These are the linear probability, logit and probit models. The choice of the appropriate specification is based upon two criteria : the estimator properties and computational estimation constraints. A brief discussion of these model specifications is presented before the choice of specification is reported.[9]

4.1.1 The Linear Probability Model

The linear probability approach consists of least squares estimation of a linear model where the dependent variable takes on a value of 0 or 1, conditional on the observance or nonobservance of an outcome. The difference in the stochastic elements of this model are assumed to be distributed linearly. This model is expressed as

$$(11) \qquad U_i = X_i B + N_i \ ,$$

where U_i = 1 if event occurs,

= 0 otherwise.

X_i is a vector of exogeneous variables, B is the parameter vector and N_i is the model error term, assumed normally distributed.

The major advantage of this specification rests with its' computational simplicity. A wide variety of computer software exists that is capable of estimating such a model.

The disadvantages of this approach are twofold. First, the estimated probability of the event occuring, given by $\hat{U}_i = X\hat{B}_i$, is not restricted to the $[0,1]$ range. This problem can be corrected by restricting $\hat{U}_i$ to this range. However, as pointed out by Amemiya (1981),[10] this method of correction may result in unrealistic kinks at the points of truncation.

A second problem is that this specification is heteroscedastic in the error term N_i.[11] This can be corrected by the use of a weighted least squares procedure.[12] Even though this correction procedure will increase the efficiency of the parameter estimates, it will not, however, remove the $\hat{U}_i$ range problem.

4.1.2 The Probit Model[13]

The basis of this specification approach is an assumption that the model stochastic elements are distributed normally. This can be seen by allowing selection equation (9) to be represented as

$$(12) \qquad U^*_{ik} = G_{ik}\pi_k + N_{ik}\ , \text{ for } k = 0,1,2.$$

G_{ik} and π_k are respectively defined as a vector of all the equation (9) variables and a vector of unknown parameters. N_{ik} is the same as defined earlier.

If N_{ik} is distributed $n(0, \sigma^2_{N_{ik}})$, then the probability of observing a particular outcome (s) is given as

$$(13) \qquad P^i_s = \text{prob}(U^*_{is} > \max_{k \neq s} U^*_{ik})$$

$$= \int_{-\infty}^{+\infty} \int_{-\infty}^{U_{1s}-U_{11}+U_{2s}} \cdots \int_{-\infty}^{U_{1s}-U_{1K}+U_{2s}} \phi\ (U_{21},\ldots,U_{2s},\ldots,U_{2K})dU_{2K}\ldots dU_{21},$$

where ϕ is a multivariate standard normal density function. This model is usually estimated via an iterative maximum likelihood procedure.[14]

There are several appealing features to this model specification. The first is that, unlike the linear probability model, the estimated outcome probabilities will always be within the [0,1] range.

Secondly, it is not necessary to assume the existance of Independence of Irrelevent Alternatives (IIA).[15] IIA is said to exist if the ratio of any two given probabilities is unaffected by the introduction of a third alternative. Rather, introducing the third alternative affects the probabilities of observing the other two by the same constant amount. Clearly, if the newly introduced alternative is a closer substitute for one of the remaining alternatives than it is for the others, this is not a very realistic property.

There are three technical estimation problems with this model specification. First, in a polychotomous (multiple) choice environment, the larger the set of possible outcomes, the more costly and complex the model estimation becomes. In particular, for models with more than three possible outcomes the estimation computational requirements may easily exceed the capability of available computer software.[16]

Secondly, there is no assurance that the estimation procedure will yield results.[17] Instead of converging to a global maximum solution, it is possible that the search for a maximum of the likelihood function will either converge to a local maximum or not converge at all.

The third problem is related to the correction of selectivity bias. If the selection equation dependent variable was binary, correction for this bias would involve a straight forward application of the "Heckman" two-step procedure.[18] However, due to the polychotomous nature of this variable, a more tractable method of correction can be more easily applied within a logistic model specification. This will be discussed below.

4.1.3 The Logit Model

The major difference between the logit and probit specifications is in the assumed distribution of the selection equation stochastic elements. While the probit model assumes a normal distribution, the logit assumes a Weibull (type I extreme value) distribution. As shown by Domencich and McFadden (1975)[19], if the stochastic elements (N_{ik}'s) of equation (12) are Weibull distributed, then

$$(14) \qquad F(N_{ik} < N) = \exp[-\exp(-N)]$$

and the difference between any two N_{ik}'s is distributed logistically normal. The probability of observing outcome (s) is given as

$$(15) \qquad P_s^i = \text{prob}(U_{is}^* > \max_{k \neq s} U_{ik}^*)$$

$$= \text{prob}(G_{is}\pi_s > \max G_{ik}\pi_k + (N_{ik} - N_{is}), \quad k \neq s).$$

Following Lee (1982),[20] let

$$(16) \qquad \max G_{ik}\pi_k + (N_{ik} - N_{is}) = \psi_s \, .$$

Therefore, it follows that

$$(17) \qquad P_s^i = \text{prob}(G_{is}\pi_s > \psi_s) = \frac{\exp(G_{is}\pi_s)}{\sum_k \exp(G_{ik}\pi_k)} \, ,$$

where the right hand side term is a logistic normal distribution.

There are several advantages of this model in comparison to the probit model. First, the logit will always converge to a solution. Secondly, the logit is computationally simpler to estimate, particularily as the size of the choice set increases. Finally, this model specification facilitates a simpler method of correction for selectivity bias.

A major disadvantage of the logit specification is the assumption of Independence of Irrelevent Alternatives (IIA), which is explicitely incorporated in this specification. According to this assumption, the relative odds of any two possible outcomes are unaffected by the presence or introduction of additional alternatives. This property can be seen with the logit specification of equation (17). Initially assume that the choice set consists of two possible outcomes (k = 1,2). The probabilities of these outcomes are given as

$$(18) \qquad P_k^i = \frac{\exp(G_{ik}\Pi_k)}{\exp(G_{i1}\Pi_1) + \exp(G_{i2}\Pi_2)}, \text{ for } k = 1, 2.$$

The relative odds of these probabilities are

$$(19) \qquad \left[\frac{P_1^i}{P_2^i}\right] = \frac{\left[\dfrac{\exp(G_{i1}\Pi_1)}{\exp(G_{i1}\Pi_1) + \exp(G_{i2}\Pi_2)}\right]}{\left[\dfrac{\exp(G_{i2}\Pi_2)}{\exp(G_{i1}\Pi_1) + \exp(G_{i2}\Pi_2)}\right]} = \frac{\exp(G_{i1}\Pi_1)}{\exp(G_{i2}\Pi_2)}$$

Now consider the effect of the introduction of a third alternative. The denominator of the right hand side of equation (18) will be expanded to include the effect of this alternative. Or, equation (18) becomes

$$(20) \qquad P_k^i = \frac{\exp(G_{ik}\Pi_k)}{\exp(G_{i1}\Pi_1) + \exp(G_{i2}\Pi_2) + \exp(G_{i3}\Pi_3)},$$

for k= 1,2,3.

However, note that the odds in equation (19) are unaffected by the introduction of this additional alternative. If the alternatives are sufficiently different in characteristics, this assumption does not impose unrealistic restrictions on the model. In fact, this property reduces the computational requirements for the evaluation of additional alternative impacts.[21]

Counterintuitive outcomes could result if the additional alternative is characteristically closer to one of the alternatives than the other. Domencich and McFadden (1975) illustrate this problem in the context of transportation mode choice.[22] They consider the situation of using an auto or bus for a particular trip. Intuitively, one would expect that the introduction of an additional bus option would affect the probability of selecting the original bus (ie - the closer substitute) more than that of the auto. However, this is not the outcome under the IIA assumption. Instead, the IIA property assumes that both probabilities are altered by the same percentage change.

This discussion implies that IIA could lead to unrealistic outcomes if the possibilities are not sufficiently different. Therefore, the specification of the choice set must be done with this fact in mind.

4.1.4 Choice of Model Specification

After comparison of the merits and restrictions of the three possible model specifications it has been decided that the logit specification is the most appropriate for the current analysis. While the linear probability model is the simplest to estimate, it has too many potential limitations. The logit is considered superior to the probit primarily because of the logit's reduced computational requirements. In addition, the use of the logit specification will facilitate the correction of selectivity bias.

With respect to the restrictions imposed by IIA, it is argued that this will not pose a serious problem. The occupational choice set in this analysis has sufficient differences between the alternatives that it seems reasonable to consider these alternatives not to be close substitutes. Also, a test of the IIA property will be done using the test of Hausman and McFadden (1984).

4.2. Selectivity Bias

Selectivity bias is an econometric problem that is very common in models with mixed discrete/continuous dependent variables. The bias is considered to be present when one or more of the dependent variables is observed conditional on the satisfaction of a selection criteria. Unless the error terms of the selection equation and the other structural equations are uncorrelated, estimation of these other structural equations will yield inconsistant estimates of the true model parameters. When the dependent variable in the selection equation is binary, there are several computationally simple two-step bias correction procedures available.[23] However, with a polychotomous dependent variable, bias correction becomes more difficult. The correction procedure that will be used for the present analysis is based upon Lee (1982).[24,25]

The nature of the selectivity bias can be observed by considering the 5 equation model,

(21) $U^*_{ik} = G_{ik}\pi_k + N_{ik}$, for $k = 0,1,2$ and

(22) $Y_{ik} = X_{ik}\gamma_k + e_{ik}$, for $k = 0,2$,

where X_{ik} represents the vector of exogeneous variables for occupation k, π_k and γ_k are unknown parameter vectors, e_{ik} and N_{ik} are the model error terms. U^*_{ik} , G_{ik} and Y_{ik} were defined earlier. The error terms are assumed to be distributed normally for e_{ik} and Weibull for N_{ik}. The selectivity bias results as the Y_{ik} 's are observed conditional upon U^*_{ik}. In particular, Y_{io} is observed iff $U^*_{io} > \max_{k\neq 0} U^*_{ik}$ and Y_{i2} is observed iff $U^*_{i2} > \max_{k\neq 2} U^*_{ik}$. Now, substituting from equation (21), the expected value of Y_{io} in equation (22) yields

(23) $E(Y_{io}) = X_{io}\gamma_o + E(e_{io} | G_{io}\pi_o > \psi_o)$.

Unless e_{io} is uncorrelated with ψ_o , the expected value of the disturbance term in equation (23) will not equal 0, and $E(Y_{io}) \neq X_{io}\gamma_o$. Therefore, estimation of this equation will result in biased estimates of Y_{io}. The bias for the other earnings equation (Y_{i2}) can be expressed in a similar fashion.

Lee has given an explicit form of the bias in equation (23). This form is

$$(24) \quad E(e_{io} | G_{io}\pi_o > \psi_o^*) = E\left[\sigma_o \rho_o \phi \left[\frac{(-J_o\ (G_{io}\pi_o\ ))}{(F_o(G_{io}\pi_o))}\right] + V_o\right],$$

where V_o is a disturbance term that is uncorrelated with N_{io}, with $E(V_o) = 0$ and is the density function of a standard normal random variable. σ_o and ρ_o are the standard deviation of e_{io} and the correlation coefficient between e_{io} and ψ_o^*. ψ_o^* is defined as a standard normal transformed error term of the logistically distributed disturbance ψ_o. This transformation is expressed as

$$(25) \qquad \psi_o^* = J_o(\psi_o) = \Phi^{-1}(F_o(\psi)) \ ,$$ [26]

with $F_o(\psi)$ representing the logistic normal distribution function of ψ and Φ^{-1} representing the inverse of a standard normal distribution function.

$J_o(G_{io}\pi_o)$ is a similar standard normal transformation of the logistic normal distribution function $F_o(G_{io}\pi_o)$.

Substituting equation (25) into equation (24) allows $E(Y_{io})$ to be expressed as

$$(26) \qquad E(Y_{io}) = X_{io}\gamma_o - E[\ \sigma_o \rho_o \phi \left[\frac{(J_o(G_{io}\pi_o))}{(F_o(G_{io}\pi_o))} \right] + V_o]$$

$$= X_{io}\gamma_o - \sigma_o \rho_o \phi \left[\frac{(J_o(G_{io}\pi_o))}{(F_o(G_{io}\pi_o))} \right] .$$

If σ_o, ρ_o and π_o were known, the value of the bias term in equation (26) could be easily calculated and estimation of this equation would be straight forward. However, as these terms are unknown, a two-step procedure must be implemented to estimate these terms. The first step of this procedure is to estimate the reduced forms of the selection equations

$$(27) \qquad U^*_{ik} = \tilde{G}_{ik}\Gamma_k + \Omega_{ik} \ , k=1,..3,$$

where $\tilde{G}_{ik}$ is a vector of exogeneous variables Γ_k is an unknown reduced form parameter vector, and Ω_{ik} is the reduced form error term. Estimation of this equation will produce consistant estimates of the parameter vector Γ_k .

These estimates are represented by $\hat{\Gamma}_k$. This first step estimation will be accomplished by the use of a logit model.

The second step consists of estimating equation (26) by ordinary least squares after substituting $\hat{\Gamma}_o$ for Γ_o and evaluating the expression

$$\phi \left[\frac{(J_o(G_{io}\hat{\Gamma}_o))}{(F_o(G_{io}\hat{\Gamma}_o))} \right] .$$

Estimation of this transformed equation will yield consistant estimates of γ_o and $\sigma_o \rho_o$. This technique will be applied to the civilian and military earnings equations.

4.3. Choice Based Sampling Bias

A choice based sample refers to a data set where the sample selection probability differs between various sample subsets. Instead of a random exogeneous sampling process across the population, observations with a particular characteristic (choice) are overly represented in the sample. Choice based samples usually occur when the data collection costs for exogeneous based sampling are considerably higher. The sample used in the present analysis is choice based as the 1979 interview year NLS sample was merged with a military sample.[27] The individuals in the military sample were drawn with a different sampling probability than those in the civilian sample.

As shown by Manski and Lerman (1977)[28], ordinary estimation of a model that uses a choice based sample will not yeild consistant parameter estimates. In the same paper, these authors also provide a method of correction for this bias.

Using their notation, define $w(i) = Q(i)/H(i)$, where $w(i)$ is a weight for the observations selecting alternative i. $Q(i)$ and $H(i)$ are respectively defined as the fraction of the population and the fraction of the choice based sample that selects alternative i. Weighting each observation by it's respective $w(i)$ will allow the consistant estimation of the model parameters. This method of correction is referred to by Manski and Lerman as a Weighted Exogeneous Sampling Maximum Likelihood (WESML) estimator.[29,30]

5. <u>Model Equations Variable Specification</u>

The purpose of this section is to specify the variables that will be used in the estimation of the empirical model. The data set to be employed consists of a subsample of the National Longitudinal Survey on Youths (1979-1981), supplemented by additional data on economic and recruitment related activities. The variables are briefly described in the following sub-sections. A more thorough description of the data set and the variables is presented in the following chapter. A summary of the hypothesized variable impacts can be found in Table 2-1.

5.1. Selection Equations

The occupational selection equations are given as

(28) $$U^*_{ik} = \alpha_i Y_{ik} + Z_{ik}B_k + N_{ik}, \text{ for } k = 0,2 \text{ and}$$

$$U^*_{ik} = Z_{ik}B_k + N_{ik}, \text{ for } k = 1.$$

the vector Z consists of all attributes, excluding income (Y_{ik}), that are viewed as influencing the choice of occupation. This vector includes individual attributes that do not vary between occupational option and attributes (both individual and occupational) that are specific to the option. Or,

(29) $$Z_{ik} = (z_i, z_{ik}),$$

where z_i = non-option specific individual attributes and z_{ik} = option specific attributes. The vector z_i includes various demographic attributes that, in some cases, have an indeterminant hypothesized impact on the choice of occupation. Specifically,

(30) z_i = (MSTATUS, RACE, URBAN, UNRATE, TSCORE, HEXP, EDDAD, EDMOM, EDSIB).

Marital status (MSTATUS) is hypothesized to have a negative impact on college enrollment. Married individuals are assumed to have greater financial responsibilities and, hence, are less likely to enroll. The effect of marital status on enlistment and civilian employment is assumed positive. There is no a priori reason to hypothesize any difference in the magnitude of the impact between these two occupational possibilities.

The variable RACE is included to control for any racial effects on occupational choice. Over the period of analysis the Armed Forces have been disproportionately staffed by minorities.[31] It has generally been assumed that this is due to poorer employment prospects in the civilian sector. Following this line of reasoning, the racial variable is hypothesized to have a positive impact on the enlistment probability. It is assumed to have a negative impact on the other alternative probabilities.

The individual's place of residence (URBAN), is assumed to have a stronge negative impact (for urban residents) on the enlistment probability. Historically the Armed Forces have received a disproportionate amount of recruits from rural areas (particularily in the south).[32] This could be due to a difference in attitudes between rural and urban residents towards the military and/or poorer employment prospects in rural regions. The hypothesized impact on the other alternatives is less certain.

The local labor market unemployment rate (UNRATE) is hypothesized to have a positive impact on the enlistment probability, a positive or indeterminant effect on college enrollment and a negative impact on civilian employment. The positive enlistment impact is attributed to the military being viewed as an alternative source of employment. The negative civilian impact is attributed to the same reasoning. For college enrollment the situation is not as clear cut. It is possible that the individual perceives college as a logical alternative to unemployment. If so, the impact of the unemployment rate would be positive. A more plausible arguement would be that the individual elects to enroll because he/she has no immediate plans to participate in the labor market. Rather, the individual plans to acquire human capital in the immidiate future and then return to the labor market. If this is true then the local unemployment rate would have no impact on the enrollment decision.

The variable TSCORE is used as a proxy variable for inherent "ability". This variable consists of the raw score results of the Armed Forces Qualification Test (AFQT).[33] The AFQT is used by the Armed Forces as a measure of the individual's trainability. This test is usually administered only to individuals that attempt to enlist. The NLS data base has these test score results for all of the sample observations. It is hypothesized that this variable will positively affect the enrollment decision. The impact on the other alternatives is indeterminate.

The variable HEXP represents the highest grade the invididual expects to complete. It is assumed that the higher the expectation, the higher the probability of an enrollment. It logically follows that this would have the opposite effect on the other alternatives. However, if military college assistance programs are viewed by the individual as a reasonable method of financing college, the expected impact on enlistment would be positive.

The last three variables in the vector (EDDAD, EDMOM, EDSIB) represent the education levels of the individual's father, mother and oldest sibling, respectively. It is hypothesized that the higher the educational levels of these family members, the higher the probability of an enrollment.[34] For the parents, the causality is assumed to be both direct and indirect. Higher educated parents are assumed to transfer their attitudes towards education to their children. Indirectly, the higher the education level of the parents the higher the family income and hence, the ability to finance the education of the children. The education level of the oldest sibling is assumed to have a positive impact as this reflects the family attitudes towards education. However, it is possible that this variable is not purely exogeneous. The education of the oldest sibling may also be a function of parental education. This possibility will be tested for prior to model estimation.

The impact of these family education variables on the other alternatives is not clear. There will probably be a negative impact as a result of the enrollment effect.

Returning to equation (29), the second set of attributes in this equation consists of those that are considered to be occupation specific (z_{ik}). For college enrollment (z_{i1}), this vector is

$$(31) \qquad z_{i1} = (\text{TNFINC, PSIBSCH, COLCOST, COLPROG}).$$

The first three variables in this vector are used to represent the ability of the individual to finance college. TNFINC is total net family income for the previous year. It is logically assumed that this variable will have a positive impact on the enrollment decision. PSIBSCH and COLCOST are respectively defined as the percentage of family members in school and the base tuition of the relevant state university. These variables are hypothesized to negatively affect the enrollment decision.

The last variable in this vector (COLPROG) indicates if the individual participated in a college prepatory program while in high school. Participation is viewed as reflecting the individual's plans to attend college and, possibly, the individual's academic ability. The hypothesized impact of this variable is positive.

The military specific vector is given as

(32) z_{i2} = (REC, NADV, LADV, ADDT, Y_{i2}, DADMIL, TFMAFS, MVEAP).

The impact of family characteristics on the enlistment decision has received little attention in prior studies.[35] Family member involvement in the military is considered to affect the individual in two ways. In an informational context, individuals that were raised in households with direct exposure to the military have less uncertainty as to the characteristics of military service. If the individual was risk adverse, this information would positively influence the enlistment decision. In addition, involvement could reflect family (and individual) attitudes toward the military. The variables DADMIL and TFMAFS are used to capture these family effects. DADMIL is a dummy variable that takes on a value of 1 if the individual's father was in the military in 1978. TFMAFS is the total number of family members (excluding the father) in the military as of 1979. By the above argument, it is hypothesized that both of these variables will have a positive impact on the enlistment decision.

One of the major areas of interest to military manpower planners is the effectiveness of "marketing" related policies on enlistments.[36] Previous empirical studies have attempted to capture these effects with limited success.[37] It is hoped that by the use of more individual specific measures, the present analysis will be more successful. The variables REC, NAOV and LADV refer to recruiter activity and advertising effort (National & Local). These variables are hypothesized to have a positive impact.

A central thrust of the recruit advertising campaign is the portrayal of the military as a mechanism to acquire human capital.[38] This acquisition process is presented as consisting of both on the job training and financial assistance for post-service education. The variables ADDT and MVEAP are used to measure the effectiveness of this campaign strategy. ADDT is based on whether the individual seeks additional training (outside of college). MVEAP represents the maximum amount of benefits the individual is eligible for under the Veterans Educational Assistance Program (VEAP). Both of these variables are hypothesized to have a positive impact on the decision to enlist.

It would be incorrect to assume that the MVEAP only reflects the effect of advertising efforts. To be more precise, the advertising effect is indirect. The direct effect consists of how successful the VEAP is at attracting individual's that would not normally consider military service. The VEAP was introduced upon the expiration of the GI Bill in January of 1977.[39] To ideally assess the impact of the VEAP a sample that covers both VEAP and pre-VEAP years is required. Unfortunately this type of sample is not available for the present analysis. With this limitation in mind, it is still hypothesized that the effect of MVEAP on enlistment will be positive.

The last variable in this vector (Y_{i2}) represents military monetary compensation. For those in the military, this variable is directly observed. For those not in the military, this variable will be estimated. A discussion of this estimation is presented in the following sub-section. The hypothesized impact of this variable on enlistments is positive.

The last option specific vector is for civilian employment (z_{io}). To insure that the model parameters are identified, a normaliztion constraint must be imposed. There are two types of normalization constraints. The first constrains a particular B_{ik} to sum to 0 across the possible outcomes.[40] This implies that, for the present trichotomous model, $B_{i1} = -(B_{io} + B_{i2})$. The second constraint sets all of the B_{ik}'s equal to 0 for a particular possible outcome.[41] This constraint is based on the notion that one of the possible outcomes is a normal state of behavior. The other options are considered to be deviations from this normal state. As shown by Avery (1980), either constraint will yield the identical statistical outcome.[42] The second method will be used as it is considered to yield more easily interpretive results.

Given this choice of normalization constraint, the civilian employment specific attributes are constrained to 0 and will not be included in the model estimation. Civilian wage effects, though, will be retained in the model via the other selection equations.

5.2. Wage Equations

The specification of the civilian wage equation is predominately based on the theory of Human Capital.[43] In general, human capital investment is usually represented by labor market experience, job specific training and eductional attainment.[44] For the present analysis the education level is relatively constant across the sample (ie - all observations are high school graduates). Therefore, human capital will be approximated by labor market experience and non-high school training programs. The civilian wage equation is specified as

$$(33) \qquad Y_{io} = (\text{TOTHRS, TGPROG, TVTPROG, VOCPROG, NWULYR, MSTATUS, RACE, TSCORE})$$

Acquired human capital is measured by the first four variables in this vector. The variable TOTHRS represents experience, as measured by the total number of full-time equivalent work weeks. TGPROG and TVTPROG are respectively the total number of government and vocational (non-government) training programs completed by the individual. VOCPROG is a dummy variable for participation in a vocational training program while in high school. These variables are hypothesized to have positive effects on the civilian wage.

The variables NWULYR and RACE are hypothesized to have negative impacts on the wage. NWULYR is the number of weeks unemployed during the previous year. This variable differs from an unemployment rate as it is individual specific. The variable RACE is a racial dummy variable. It is used to capture the effects of direct/indirect labor market discrimination and other unobservable individual characteristic effects.[45]

Marital status (MSTATUS) is hypothesized to have a positive effect. This is due to a higher assumed attatchment to the labor market and, hence, observed higher wage rates for married individuals relative to single persons.[46] The last variable in this vector (TSCORE) is used as a proxy measure of unobservable individual ability. This attribute is hypothesized to have a positive effect on the civilian wage.

Military wages do not exhibit as much variation as those in the civilian sector at entry level positions. For most intents and purposes, the entry level military wage for non-prior-service (NPS) enlistees is exogeneous to the individual's characteristics. The wage for this group is relatively constant cross-sectionally and determined by the Federal budgetary process. However, it is possible to introduce some variation into this wage. The sample covers three years. This allows the introduction of some variation due to periodic cost of living increases (COLA) and real wage increases. In addition, total military compensation comprises Basic Military Compensation (BMC) and additional allowances and incentive pays.[47] The allowances consist of Basic Allowances for Quarters (BAQ), clothing and meal allowances. Individuals with dependents are given additional living allowances. Inclusion of these allowances will give some additional variation in total compensation. Special incentive pays will not, however, be included as these pays are conditional upon occupational speciality and location of duty assignment.

Given this exogeneous structure of military compensation, the equation for total military compenstion is expressed as

(34) $Y_{i2} = RMC(1 + a*TDEPS)$.[48]

RMC is the sum of BMC and other allowances. These allowances are supplemented if the individual has dependents. The effect of this supplementation is measured by a*TDEPS, where TDEPS is the number of dependents.

TABLE 2-1: Summary of Coefficient Hypotheses

Variable	Equation: College	Military	Y_{io} (civilian wage)	Y_{i2} (military wage)
MSTATUS	-	+/?		+
RACE	-	+	-	
URBAN	?	-		
UNRATE	?	+		
TSCORE	+	+/?		+
HEXP	+	+/?		
EDDAD	+	-		
EDMOM	+	-		
EDSIB	+	-		
TNFINC	+	-		
COLCOST	-	+		
PSIBSCH	-	+		
COLPROG	+	-		
REC	?	+		
NADV	-	+		
LADV	-	+		
ADDT	?	+		
Y_{i2}	-/?	+		
Y_{io}	-/?	-		

TABLE 2-1 (Cont.)

Variable	Equation			
	College	Military	Y_{io}	Y_{i2}
DADMIL	-/?	+		
TFMAFS	-/?	+		
MVEAP	-/?	+		
TOTHRS			+	
TGPROG			+	
TVTPROG			+	
VOCPROG			+	
NWULYR			-	
TDEPS				+

6. Chapter Summary

In brief, the purpose of this chapter was to:

A.) Present a theoretical framework for the analysis of the enlistment decision. The model presented was based on the random utility model.

B.) Discuss the econometric issues relevent to the model estimation. The results of this discussion are the choice of a logit model specification, the use of the "Lee Approach" for the correction of selectivity bias, and the application of sample weights (Manski and Lerman) for the correction of choice based sampling bias.

C.) Specify the empirical model equation. The variables specified consist of economic and non-economic attitudinal attributes. A more detailed description of these variables (and the data base in general) is presented in the following chapter.

Endnotes

1.) In a technical sense, Thurstone did not develop a theory of utility. Rather he developed a "Law of Comparative Judgement" for the analysis of responses to various stimuli in a psychological setting. An excellent discussion of Thurstone's model and it's applications is presented in Bock and Jones (1968).

2.) For examples of the application of this model see Domencich and McFadden (1975) or Hausman and Wise (1978). Additional example references are found in the survey article of Amemiya (1981).

3.) This inequality relationship is assumed strict as the probability of $U_j^i = U_k^i$, for all k = j is zero, by definition.

4.) For example, a more disaggregate choice set would breakdown civilian employment by job type, military service by branch and education by major field of study and/or type of school (private vs public).

5.) The decision to exclude non-high school graduates from the sample is based on the demand constraint complexities that would otherwise result. This problem is discussed in Ash, Udis and Mcknown (1983), pp 147,154 and Brown (1984), pp 4.

6.) See Maddala (1983), pps. 275-278.

7.) Ideal is defined as having complete information on all of the endogeneous variables.

8.) Santos (1981) and Kalton (1982) present a discussion on various methods of imputing missing values. These methods, however, are based on the assumption that the missing values are the result of a random process. This is not the case for the present analysis.

9.) A more detailed discussion of these models can be found in the survey articles of Amemiya (1981) or McFadden (1976). Chapters 4 and 5 of Domencich and McFadden (1975) also provide a good discussion of these models.

10.) Pp. 1486.

11.) This problem can be seen upon examination of the properties of the error term N_i. In particular, $E(N_i) = (1-X_iB)X_iB + (-X_iB)(1-X_iB) = 0$ and $E(N_i^2) = (1-X_i(B)X_iB$

12.) See Maddala (1983), pps. 15-16.

13.) A rather extensive discussion of the theory and applications of the probit model is found in Daganzo (1980).

14.) The most commonly used procedures are the Newton-Raphson and Method of Scoring. These procedures are discussed in Amemiya (1981). There are alternative non-maximum likelihood methods that yield estimates that are close to the maximum likelihood estimates. See Maddala (1983), chapter 2 and 3 for a discussion of these alternative procedures.

15.) This is discussed in greater detail in McFadden (1973).

16.) See Maddala (1983), Hauseman and Wise (1978) or Domencich and McFadden (1975).

17.) See Pindyke and Rubinfeld (1981), pp. 294 or Hausman and McFadden (1984).

18.) Heckman (1976, 1979). This procedure is discussed in Maddala (1983) for a variety of sample bias problems.

19.) Pps. 63-65.

20.) Also presented in Maddala (1983), pps. 275-277.

21.) See Domencich and McFadden (1975), pps. 70-71.

22.) For application examples see Heckman (1976, 19), Lee (1978), or Maddala (1983).

23.) A presentation of this approach can also be found in Maddala (1983), pps. 275-276.

24.) Slightly different correction procedures can be found in Dubin and McFadden (1984) or Hay (1984).

25.) A computationally simple and accurate approximation of this transformation is found in Bock and Jones (1968), Appendix C.

26.) Also see Maddala (1983), pps. 272, 276 for a discussion of this transformation.

27.) See The National Longitudinal Surveys Handbook (1983), pps. 11-13, for a description of how the military and civilian samples were drawn.

28.) Pps. 1985-1986.

29.) Pp. 1981.

30.) For examples of the application of the WESML estimator see Daula, Fagan and Smith (1982) and Daula and Smith (1984).

31.) See Table 1-1.

32.) See south over representation

33.) This variable is discussed in more detail in Chapter 3. For background information on the AFQT see Maier and Grafton (1980).

34.) For example see Willis and Rosen (1979), Kenny, Lee, Maddala and Trost (1979) or King and Knapp (1978)

35.) This omission is discussed by Faris (1984).

36.) See GAO/FPCP-76-168 (1976).

37.) For an example of the appilcation of this procedure see Daula, Fagan and Smith (1982).

38.) See Evans (undated).

39.) For a discussion of the VEAP and the GI Bill see Fernandez (1980).

40.) See McFadden (1976).

41.) See Avery (1980).

42.) Pp 17.

43.) See Becker (1975), Mincer (1974) or Rosen (1977) for a discussion of the theory of human capital.

44.) See Mincer (1974), Ashenfelter (19), Wise (1975) and Medoff and Abraham (1980) for examples of empirical estimations of the returns to human capital investment.

45.) Indirect discrimination refers to the effect of pre-labor morket discrimination on earnings potential. For a discussion of this see Welch (1967, 1973).

46.) This hypothesis is supported by the empirical findings of Levy (1980), Harworth, Gwartney, and Harworth (1975) and Gwartney and Long (1978).

47.) See GAO/NSIAD-84-41 (1984) for background information on military compensation.

48.) This is the same specification used by Daula (1981).

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THE EFFECTS OF ECONOMIC CONDITIONS IN THE SOUTHWEST ON REGIONAL U.S. ARMY RECRUITING

by

Charles Dale

The author is an Economist in the Personnel Policy Research Group of the U.S. Army Research Institute for the Behavioral and Social Sciences. The author is grateful to LTC George Thompson, Juri Toomepuu, Curtis Gilroy, CPT Edward Williams, Ann Orr, and George Abrahams for helpful discussions, and to Brian Baker, Cavan Capps, and Kate Anderson for research assistance. The views expressed in this paper are solely those of the author and not necessarily those of any of the aforementioned individuals or the U.S. Army Research Institute.

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ABSTRACT

The U.S. Army Recruiting Command has recently begun a three-part research study, designed to manage its limited resources effectively. One part, of which this paper is a preliminary study of the Southwest Recruiting Region, consists of identifying macroeconomic variables that may serve as leading indicators of potential recruiting difficulties. The second part will identify internal institutional factors that may pinpoint potential problems. The final part will be the creation of a decision support system that the Recruiting Command may use to reallocate resources when necessary.

I. INTRODUCTION

In recent years the Army has been very successful in attracting high-quality enlistees. There are many reasons for this, but economic factors undoubtedly play a significant role. The Army has a vital interest in trying to determine how long these favorable recruiting trends will continue.

This paper describes the early stages of a search for a series of leading economic indicators that could alert the Army Recruiting Command to potential recruiting difficulties. Although preliminary results of searching for a leading indicator for the Northeast Region are available in Dale (1983), we concentrate here on the Southwest Regional Recruiting Region. The preliminary results indicate that there is no single economic variable that can predict recruiting success, but, as in other regions, unemployment rates and levels of educational benefits appear to be significant factors.

II. THE THREE VOLUNTEER ARMIES

Three very different types of recruiting environments are shown in Charts 1 through 5, which are taken from Thurman (1982). During the first years of the all-volunteer force (AVF), the Army had several factors in its favor, as shown in Chart 1. The youth population and unemployment were increasing, military wages were kept comparable with civilian wages, and the GI Bill was still in effect. The Army had adequate recruiting resources, which it obtained partly because of the uncertainty associated with the advent of the AVF.

The situation changed in the period from 1976 to 1980. Although the youth population continued to increase, economic factors began to turn against the Army. Unemployment declined, military wages began to lag behind civilian wages, the GI Bill was replaced by a contributory educational program, and recruiting resources were cut. By 1979, the Army fell far short of its recruiting mission.

The recruiting situation changed dramatically after 1980. Recruiters' expectations became more realistic, due in part to recognition that the youth cohort was beginning a long-term decline that would make recruiting more difficult. At the same time, recruiting was helped markedly by the introduction of a variable housing allowance, by increasing unemployment, and more by recruiting resources and educational incentives. Pay comparability was restored with increases of 11 percent, 14 percent, and 4 percent in fiscal years 1980, 1981, and 1982, respectively.

Results for recruiting and retention for the three periods of the AVF are shown on Chart 2. The difficulties of the middle period, 1976 to 1980, are quite clear. There were not only problems with achieving the Army's recruiting mission, but retention rates among those with 5 to 10 years of service dropped sharply, and there was a marked decline in the number of enlistees who scored in the upper half of the Armed Forces Qualification Test (AFQT). In recent years, recruiting and retention have improved greatly.

It is difficult to determine the importance in the enlistment decision of nonquantifiable factors, such as patriotism and the improving image of the military. Nonetheless, an overall estimate of youths' propensity to enlist is attempted by the Youth Attitude Tracking Study (YATS). Chart 3 shows that in recent years youths are much more likely to consider enlisting, although economic factors cannot be separated from other factors.

Economic and demographic factors that affect enlistments are shown on Charts 4 and 5. It is uncertain what levels of aid will be available for higher education, which competes with the Army for young males, and population trends are clearly unfavorable. All the other factors shown (i.e., unemployment, unique Army education incentives, pay, and recruiting resources), have been very conducive to recruiting the last few years. The Army is very interested in how long these trends may continue.

III. RECRUITING IN THE SOUTHWEST — THE SEARCH FOR A LEADING INDICATOR

The Southwest has typically supplied the Army with only about 15 percent of its male high school graduates (see Table 1). This section attempts to identify whether the relative prosperity of this region may account for this. We seek a leading economic indicator for recruiting problems in this region.

The number of Army enlistments of male high school graduates for the Southwest region is shown on Chart 6. Enlistees do not always enter the Army immediately. They may sign a contract, and enter later under the delayed entry program (DEP). The data in Chart 6 capture this phenomenon and show when enlistees actually signed contracts. This is important from the point of view of economic theory, since contract signing is supply-determined, by the enlistee. Time of actual accession, on the other hand, may be demand-determined by the recruiters, who work on quarterly missions.

The surge to sign contracts before the December 1976 expiration of the GI Bill shows clearly on Chart 6, followed by a steep drop. There was another sharp drop in all regions in early 1978, and then a gradually improving trend. We wish to identify leading indicators of this type of activity.

Unemployment rates for seven states in the region are shown in Charts 7 through 13. In light of the correlation between aggregate unemployment rates and national enlistment rates described in the last section, it is surprising that state unemployment rates are not better indicators of regional enlistment rates.

The Southwest has been one of the most prosperous regions of the country, because of its rich resource base and its high ranking among regions for receipt of defense expenditures (see Dale, 1982; and Brock, 1982). As a result, only very recently has this region begun to suffer relatively high levels of unemployment.

Oil-rich Texas and Oklahoma began strong upturns in unemployment only in about mid-1982. Colorado, Mississippi, and Missouri have had high but fairly steady unemployment rates. Arkansas and Louisiana have recently shown levels at or above the national average.

Thus, while unemployment levels in the Southwest Region have recently become high by historical standards, their past patterns do not give any clear indication that they would have been useful for predicting Army recruiting difficulties. This poor predictive performance is true also for other specialized indicators, such as the Federal Reserve Bank of Dallas' index of Texas industrial production (see Tarpley, 1982).

At least two explanations for the dismal performance of state unemployment rates as leading indicators are possible. First, other factors, such as educational benefits, may have equal importance. Second, there is some question about the accuracy of the state unemployment estimates (see Bureau of Labor Statistics, 1980). Third, most state unemployment rates are not reported at the same time as the national rate, so there is a built-in delay in providing information on how good or bad job market prospects are.

If measurement is indeed a significant problem, then national indicators may avoid some of them, because of offsetting errors in different regions. The next section investigates this possibility.

IV. NATIONAL LEADING ECONOMIC INDICATORS

Table 1 shows that the share of male high school graduate enlistees as a percentage of the national total has been approximately constant over the past several years. Thus it is possible that a national indicator might be useful for regional prediction. National economic indicators would also be useful, simply because they are more readily obtainable than are state data.

There have been a number of studies that examined the relationship between economic variables and Army enlistments (see, for example, Dale and Gilroy, 1983; Daula et al., 1982; Baldwin et al., 1982; and Kalinich and Wenzel, 1982). None of them, however, attempted to concentrate on regional recruiting.

Charts 14 through 20 show several of the well-known indicators of economic activity. The composite index of 12 leading indicators shows some dramatic movements, but they do not lead or correlate very well with recruiting results. Similarly, the national unemployment rate has changed too gradually to be useful. The long-term unemployment rate, 15 weeks or longer, has been surprisingly and consistently low until very recently.

Initial claims for state unemployment insurance (Chart 17) may eventually prove useful. Again there is only a loose relationship between this indicator and enlistments, but a sudden sharp drop in unemployment claims could mean that recruiting difficulties will follow. This indicator will be investigated more closely in further studies of the Southwest and other regions.

Finally, the indexes of stock prices, housing starts, and industrial production were tried, primarily for completeness. The industrial production index is more of a coincident indicator than a leading indicator, and the other two indexes are closely linked to financial factors, such as interest rates. Thus, none of them appears particularly useful.

The author was prepared to attempt all sorts of sophisticated techniques to determine the importance of different indicators, lag lengths, etc. It is clear at this point, however, that such analyses would be premature. At least for high school graduates, factors such as the availability of educational incentives appear to be just as important as aggregate economic variables.

V. CONCLUSIONS

National unemployment rates have recently been a fairly reliable indicator of success rates of Army recruiters, but regional unemployment rates have been very erratic. If the economy of the Southwest continues to improve much more rapidly than other parts of the country, then that region may become difficult ground for Army recruiting.

TABLE 1

ARMY ENLISTMENTS OF MALE HIGH SCHOOL GRADUATES
RESULTS BY RECRUITING REGIONS
(Thousands of Contracts)

	Fiscal Year					
	1977	1978	1979	1980	1981	1982 (9 months)
Northeast	26.9 21.7%	19.5 22.0%	14.7 21.6%	14.7 21.2%	15.5 21.0%	14.7 21.9%
Southeast	35.4 28.6%	26.7 30.2%	20.6 30.2%	18.5 26.6%	18.7 25.3%	16.3 24.3%
Southwest	17.5 14.2%	13.3 15.0%	10.4 15.3%	10.6 15.2%	10.5 14.2%	8.8 13.1%
Midwest	26.3 21.3%	19.2 21.7%	13.9 20.4%	16.3 23.5%	19.5 26.3%	17.8 26.7%
West	17.5 14.2%	9.8 11.1%	8.6 12.6%	9.4 13.5%	9.7 13.2%	9.4 14.1%
TOTAL	123.7 100%	88.5 100%	68.0 100%	69.5 100%	74.0 100%	67.0 100%

Notes:

Fiscal year 1977 results include the December 1976 bulge due to expiration of the GI Bill.

The Southwest Recruiting Region includes District Recruiting Centers (DRCs) at Dallas, Houston, and San Antonio, Texas; Oklahoma City, Oklahoma; New Orleans, Louisiana; Albuquerque, New Mexico; Denver, Colorado; Jackson, Mississippi; Kansas City, Missouri; and Little Rock, Arkansas.

CHART 1

THREE VOLUNTEER ARMIES

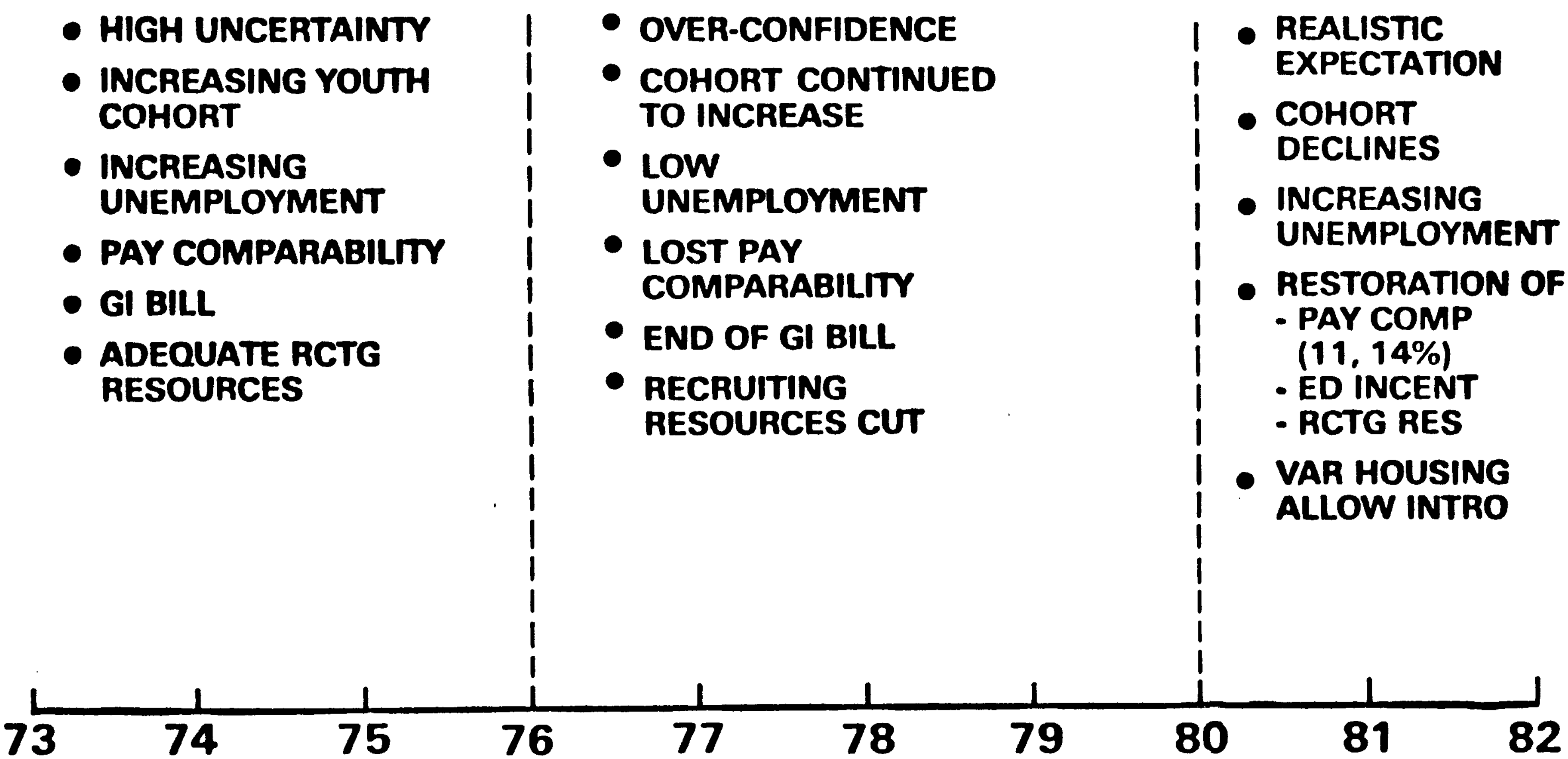


CHART 2

RESULTS IN RECRUITING AND RETENTION

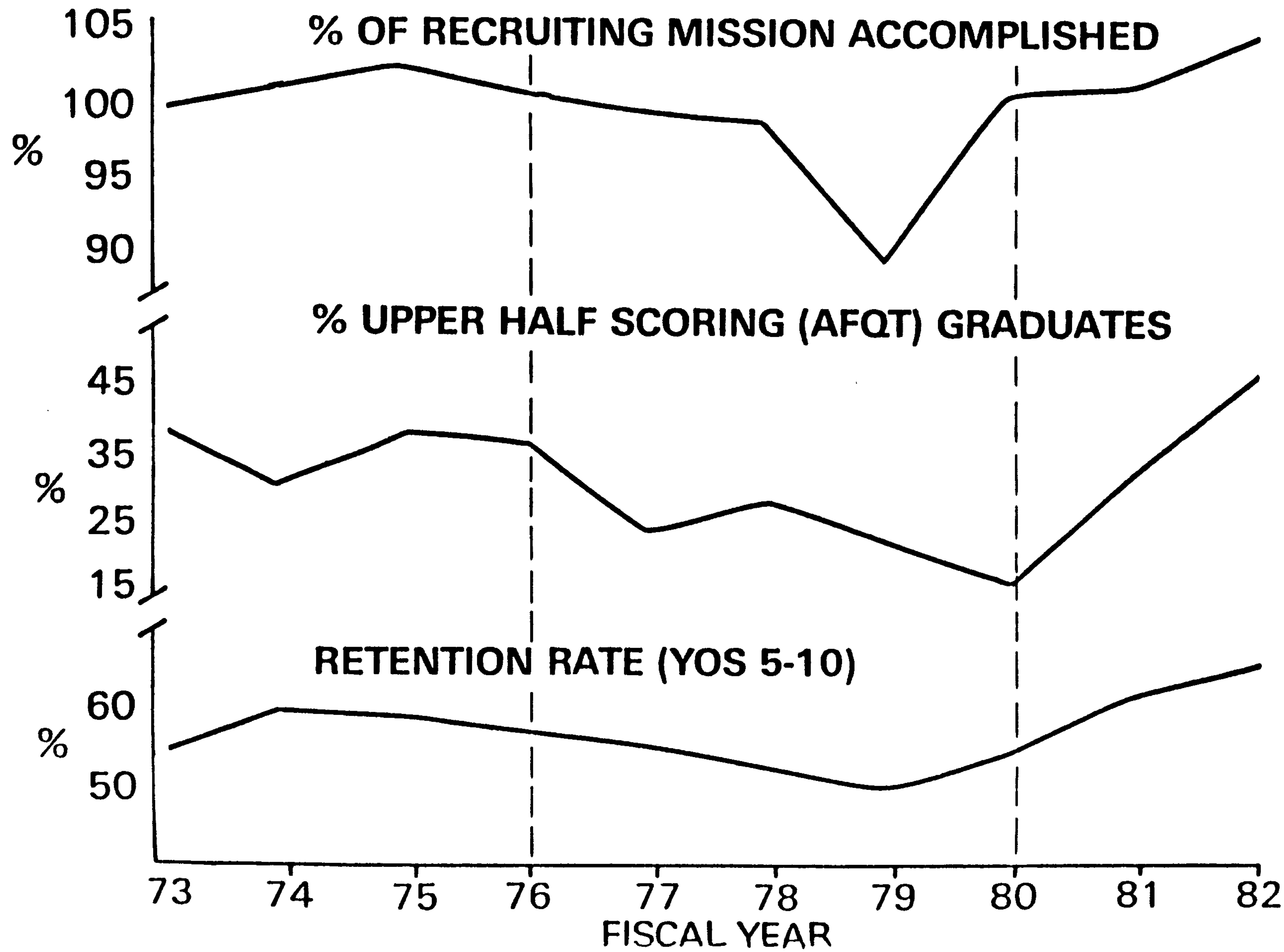
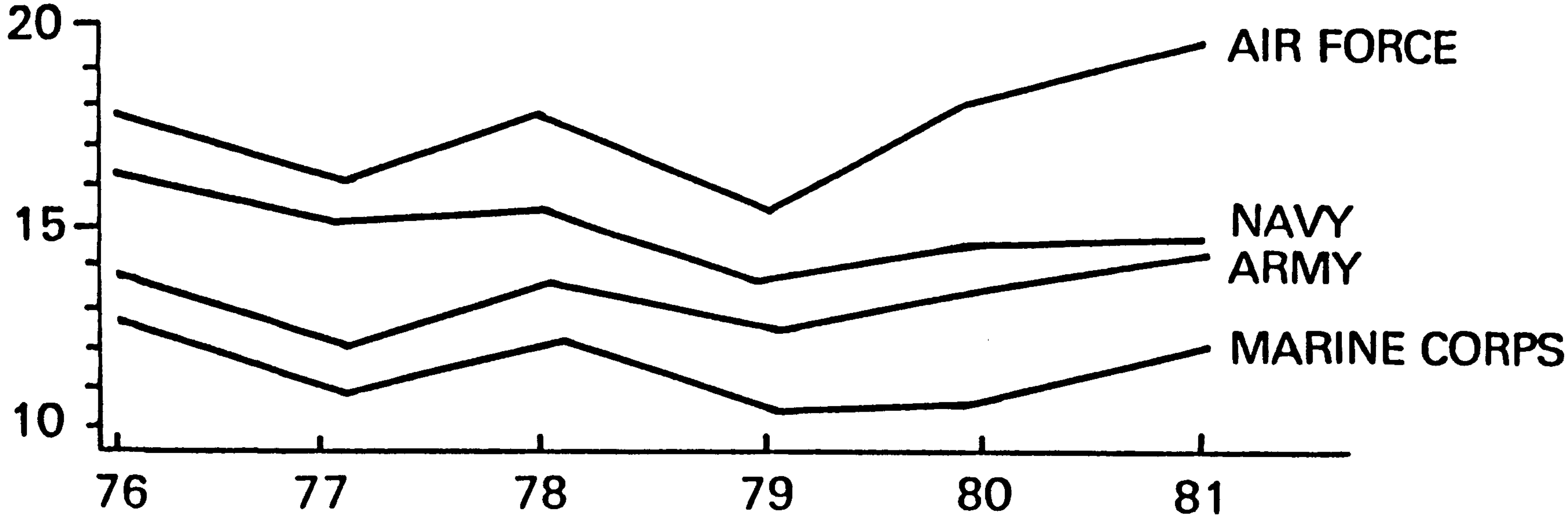


CHART 3

NATIONAL TRENDS IN PROPENSITY



SOURCE: YOUTH ATTITUDE TRACKING STUDY; INCLINED TOWARD SERVICE

CHART 4

ENVIRONMENTAL CONDITIONS

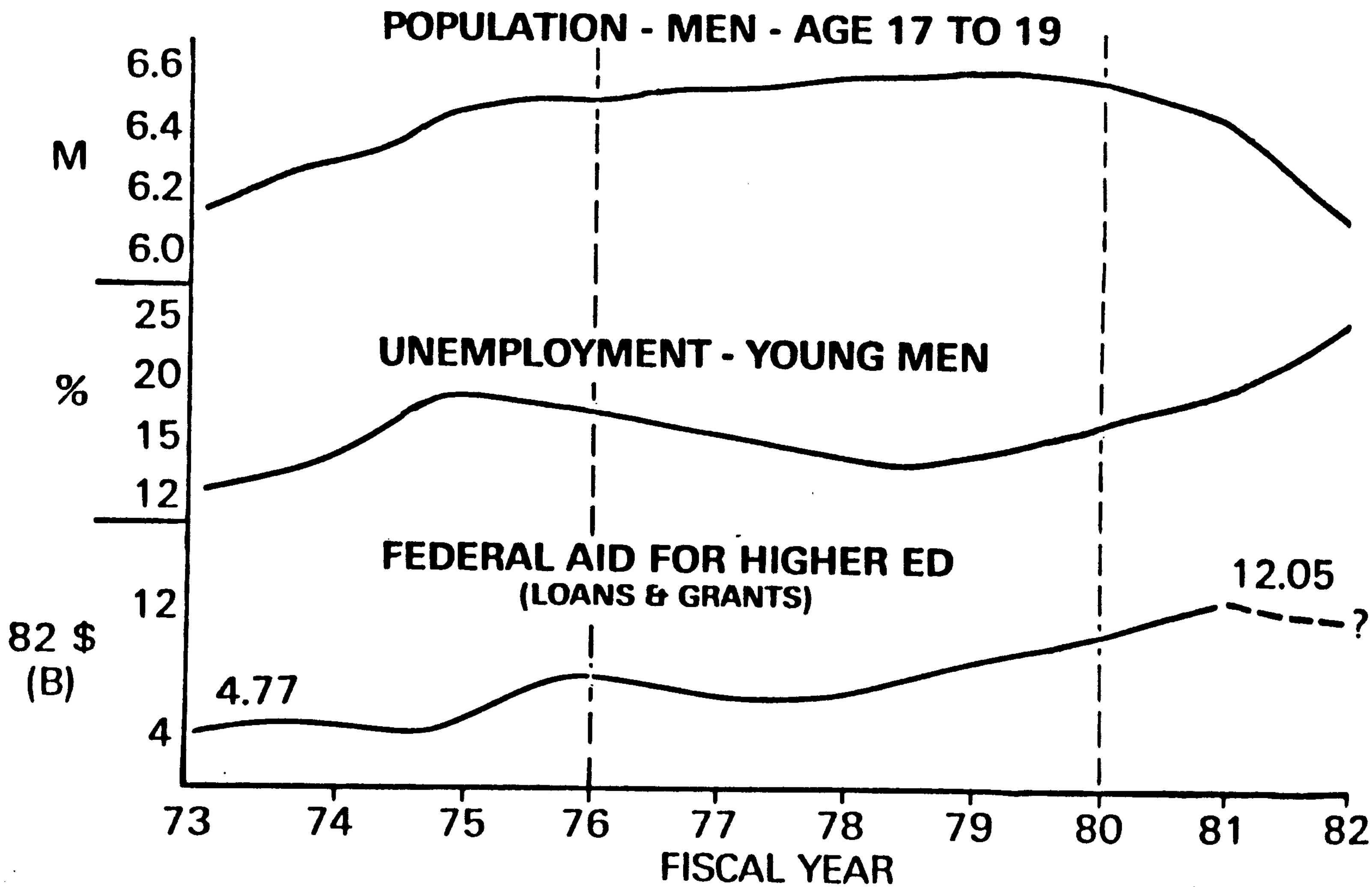


CHART 5

INCENTIVES AND RECRUITING RESOURCES
(1982 DOLLARS)

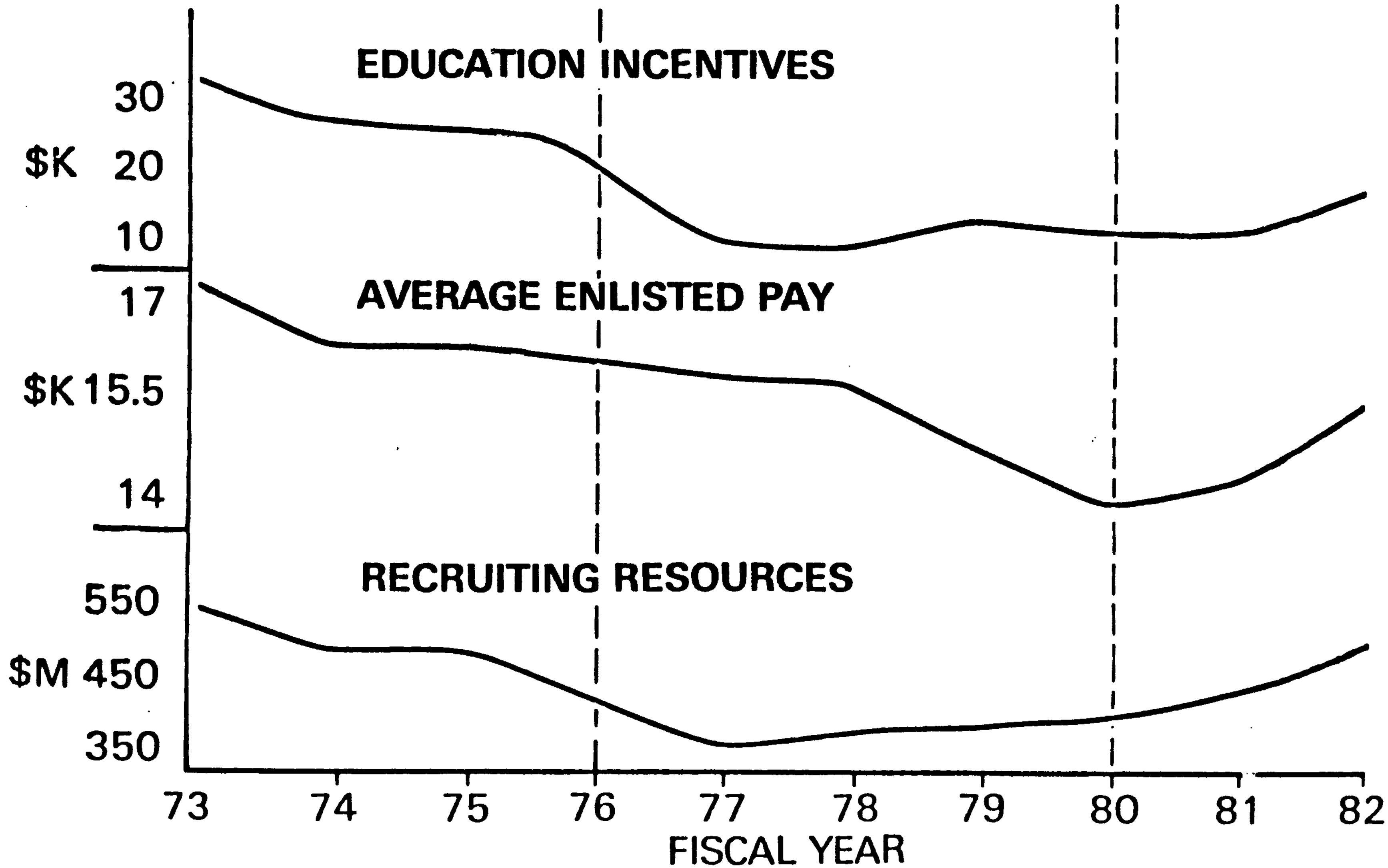


CHART 6

ARMY ENLISTMENTS OF MALE HIGH SCHOOL GRADUATES - SOUTHWEST REGION

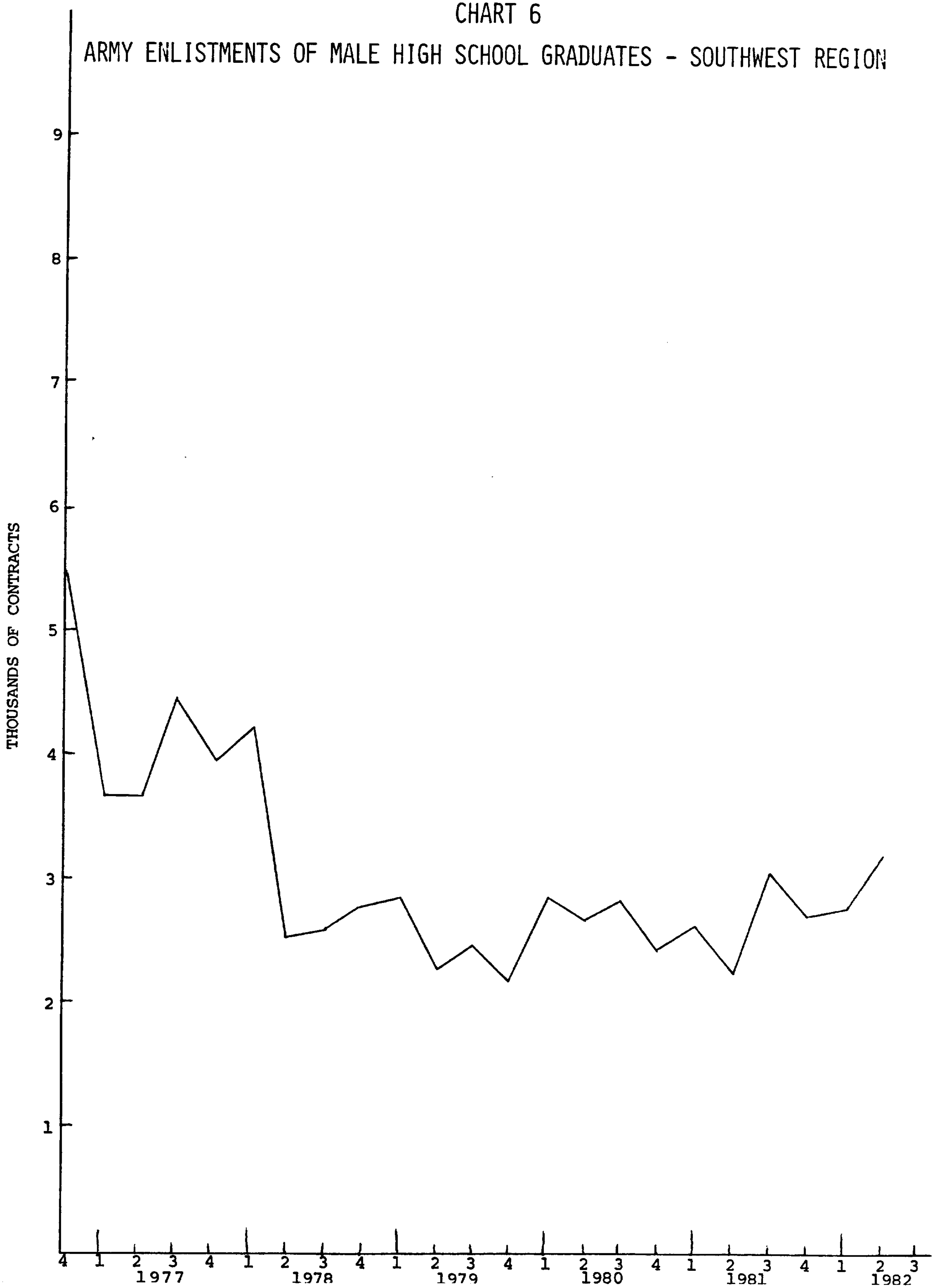


CHART 7

TEXAS UNEMPLOYMENT RATE

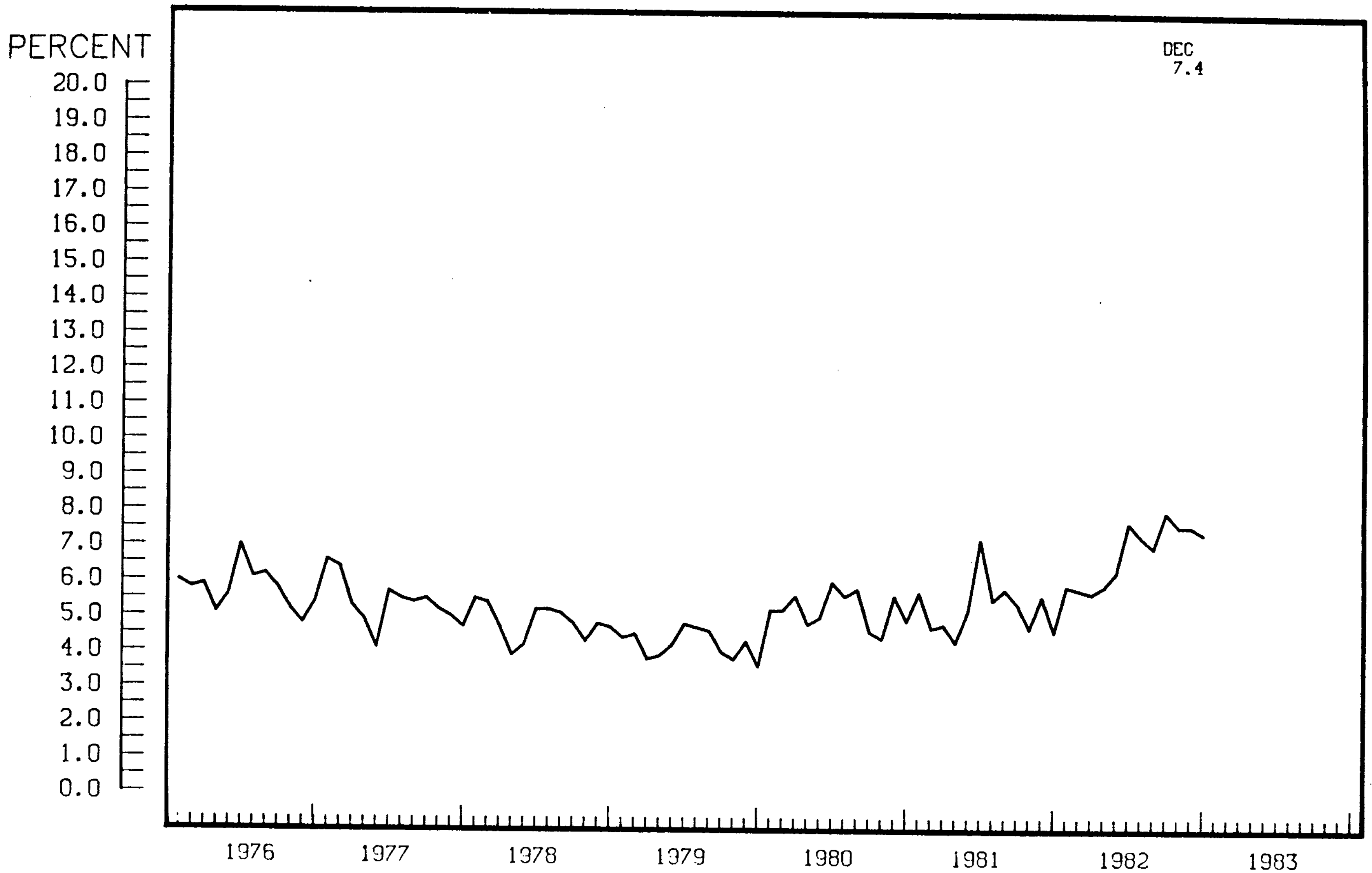


CHART 8

OKLAHOMA UNEMPLOYMENT RATE

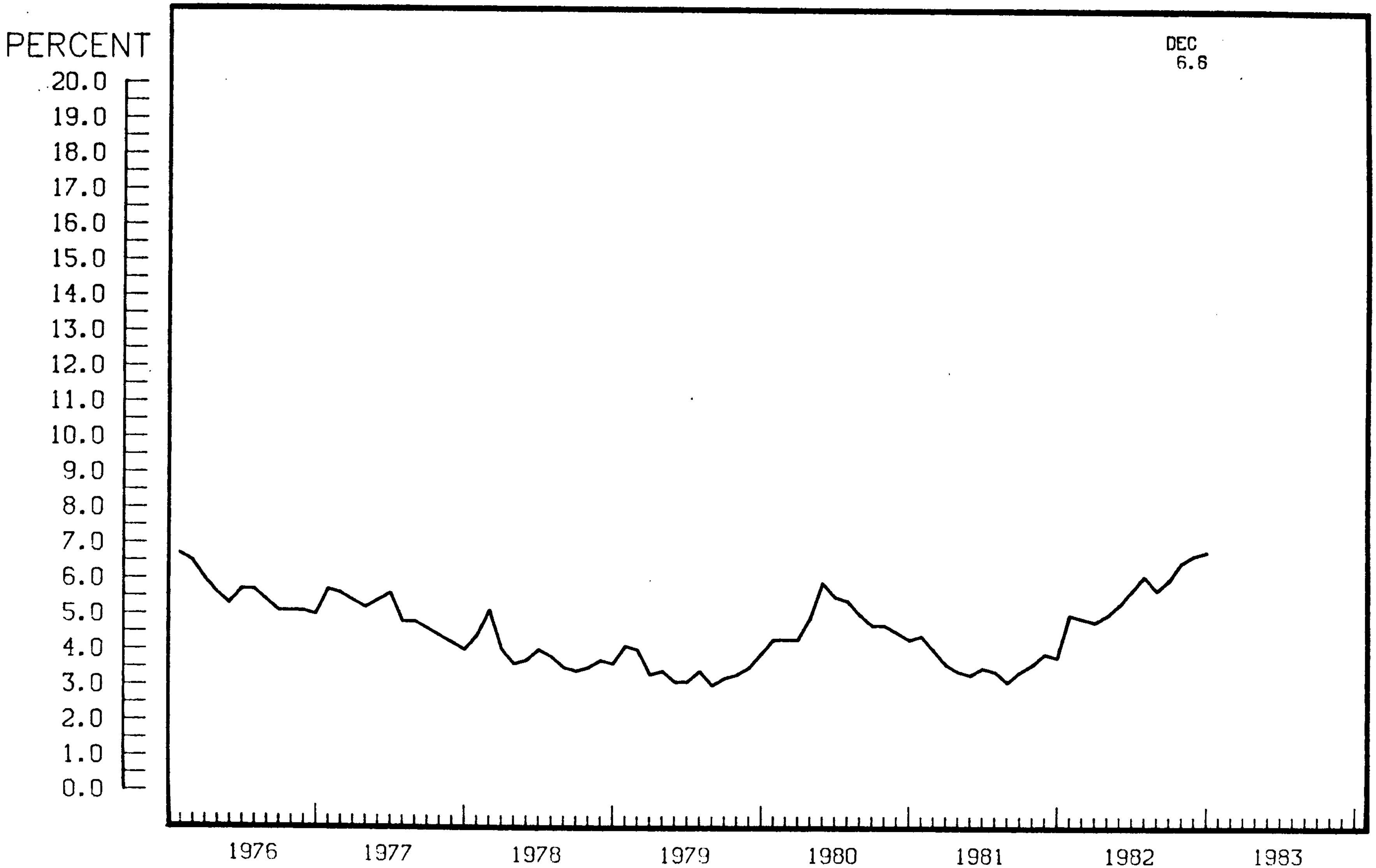


CHART 9

COLORADO UNEMPLOYMENT RATE

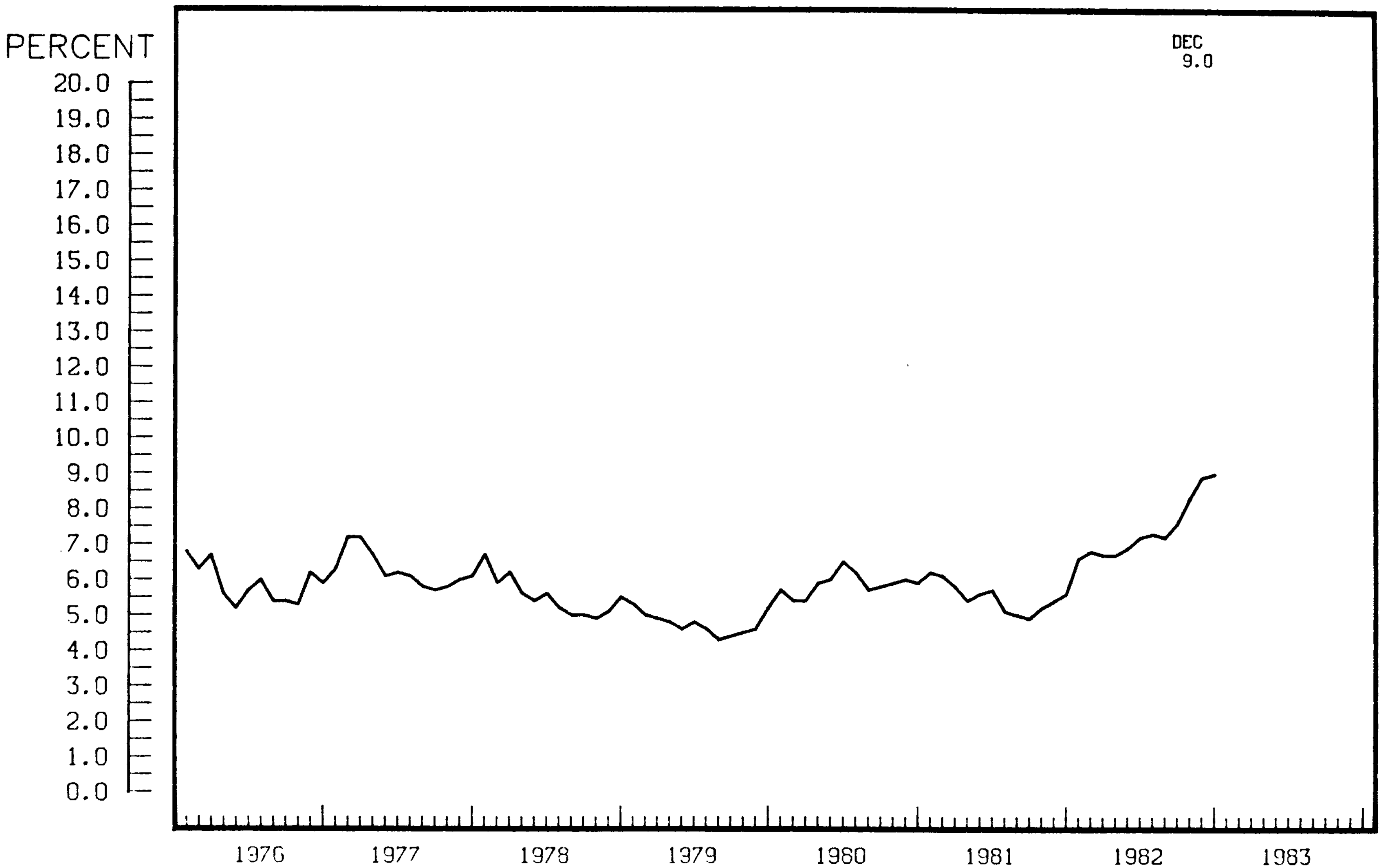


CHART 10

MISSISSIPPI UNEMPLOYMENT RATE

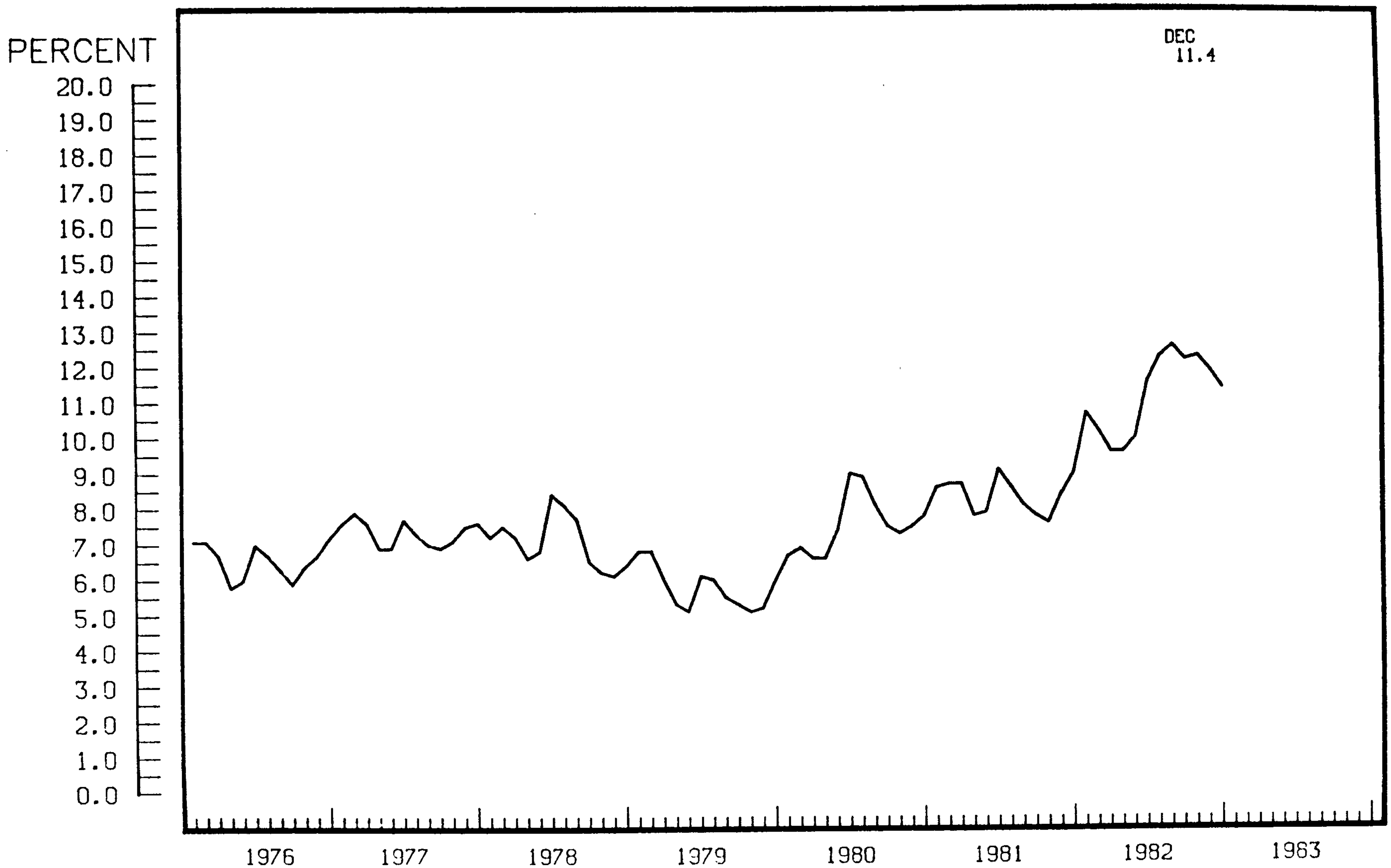


CHART 11

MISSOURI UNEMPLOYMENT RATE

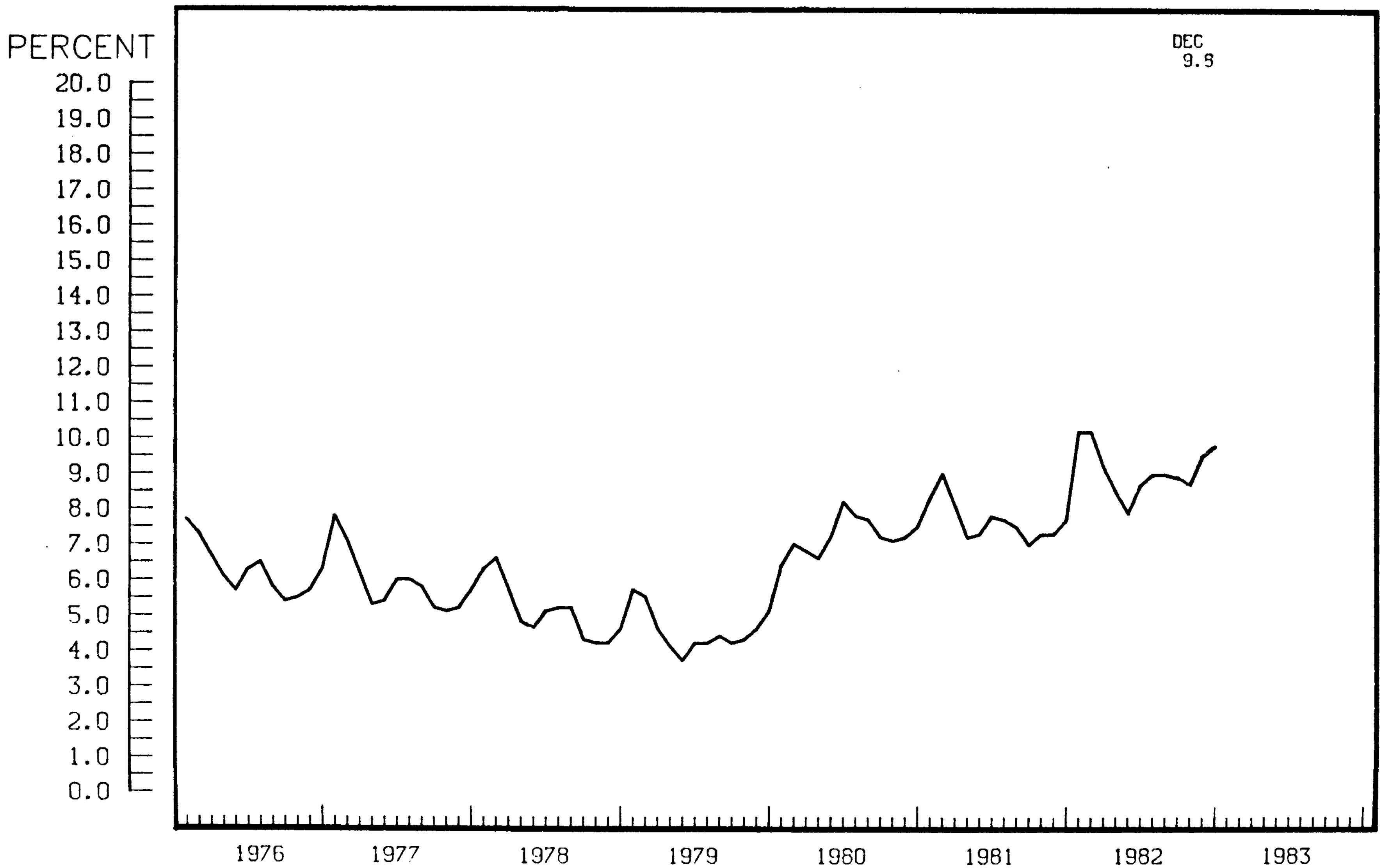


CHART 12

ARKANSAS UNEMPLOYMENT RATE

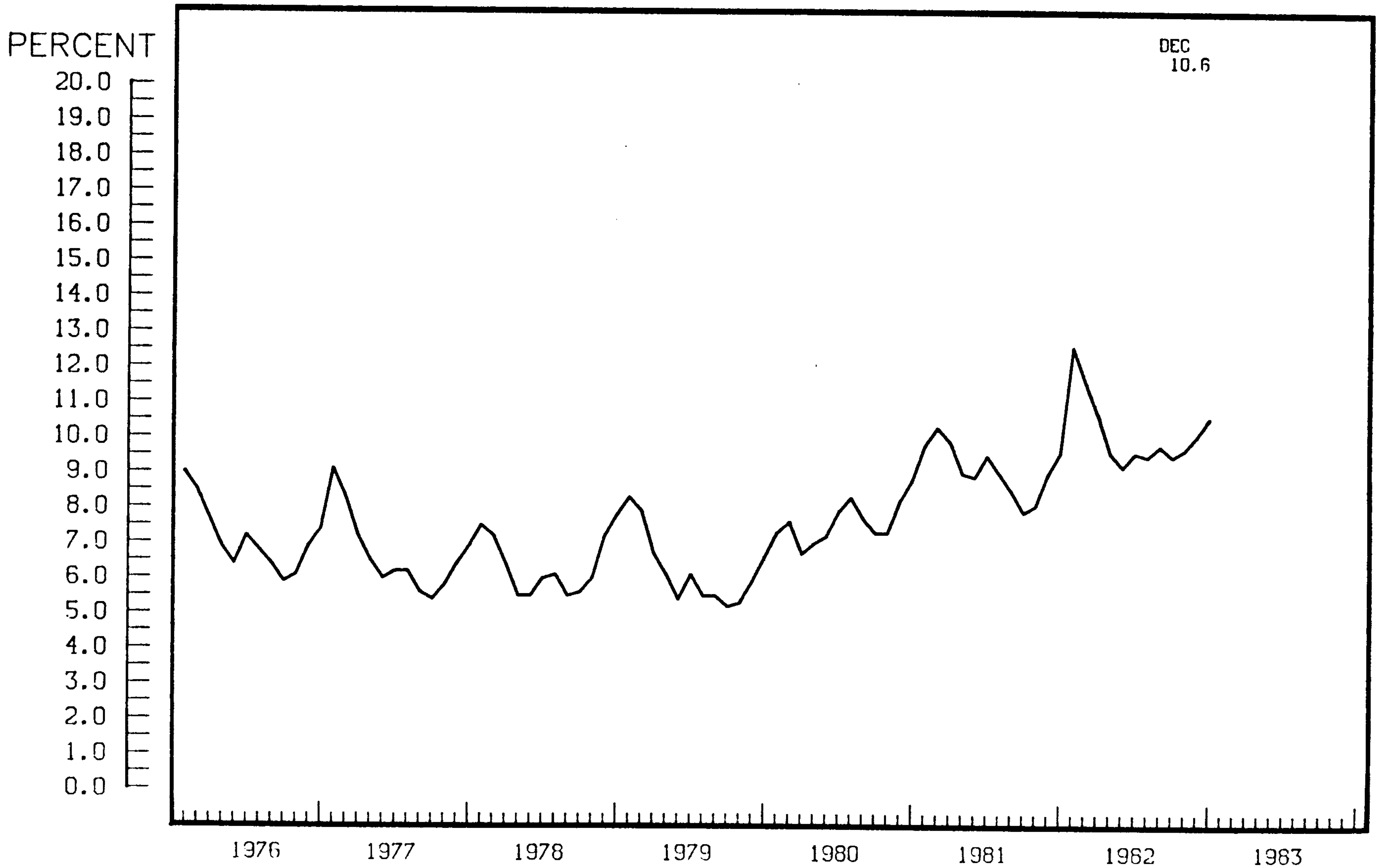


CHART 13

LOUISIANA UNEMPLOYMENT RATE

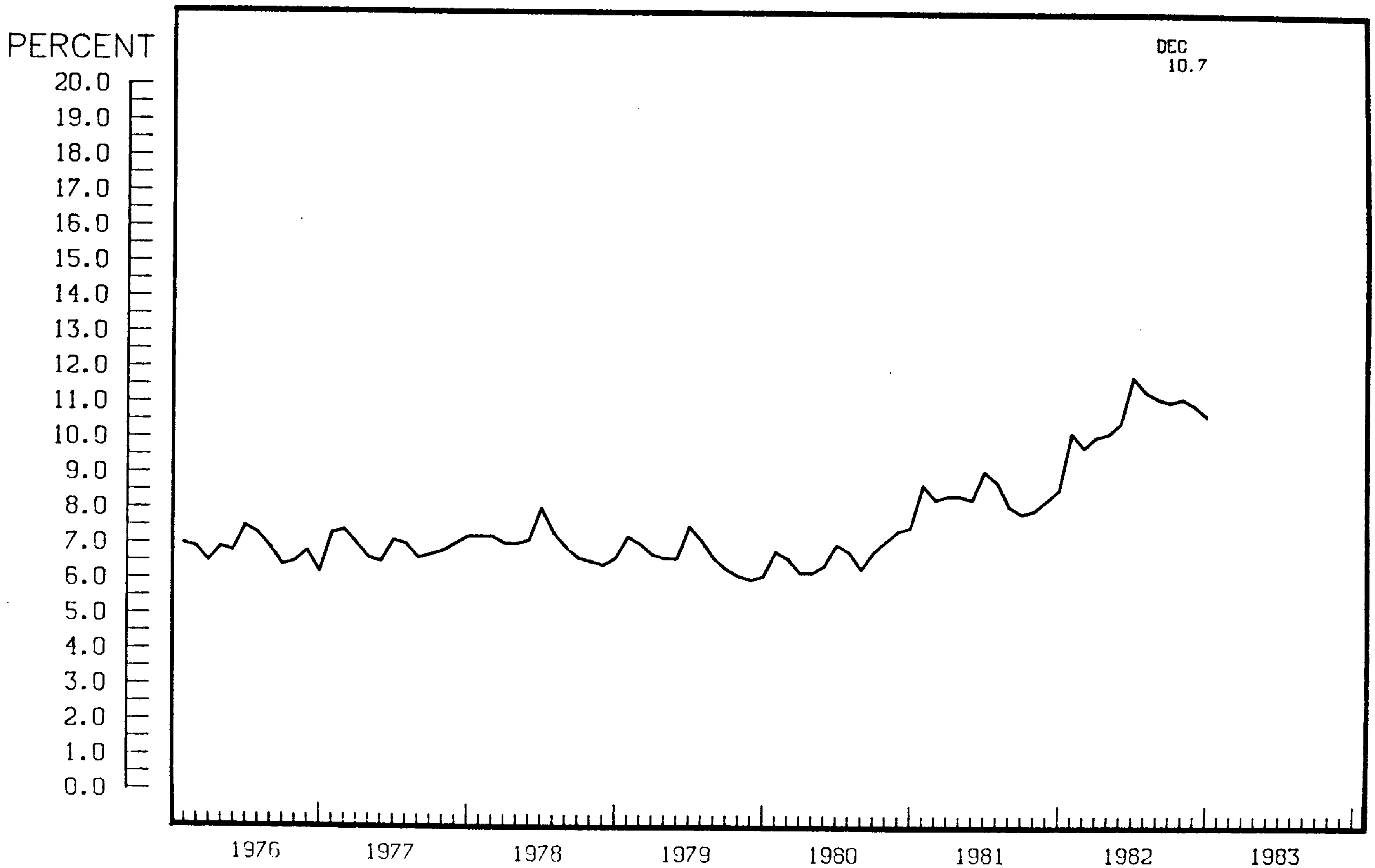


CHART 14

INDEX OF 12 LEADING INDICATORS (1967 = 100)

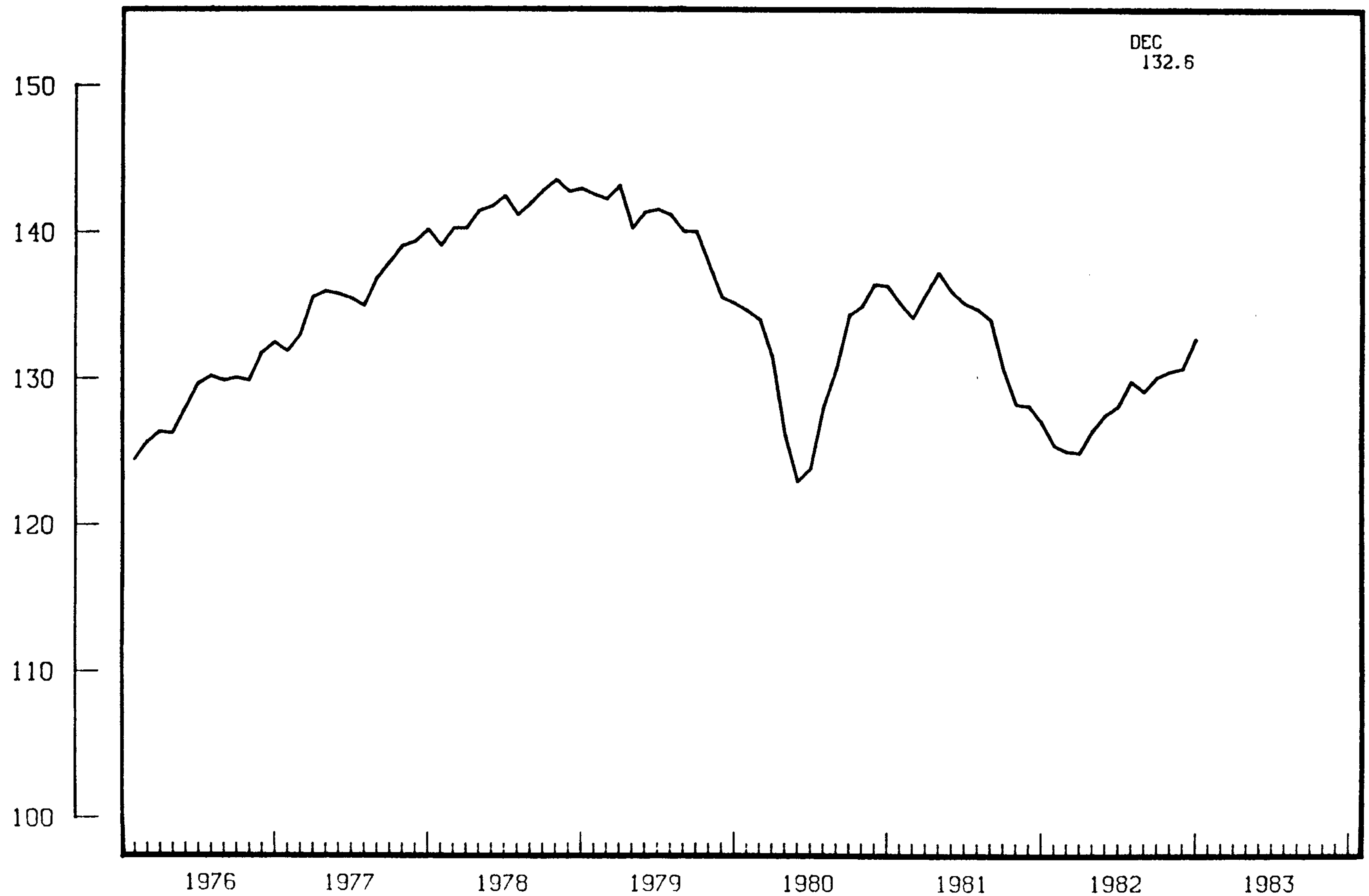


CHART 15

NATIONAL UNEMPLOYMENT RATE

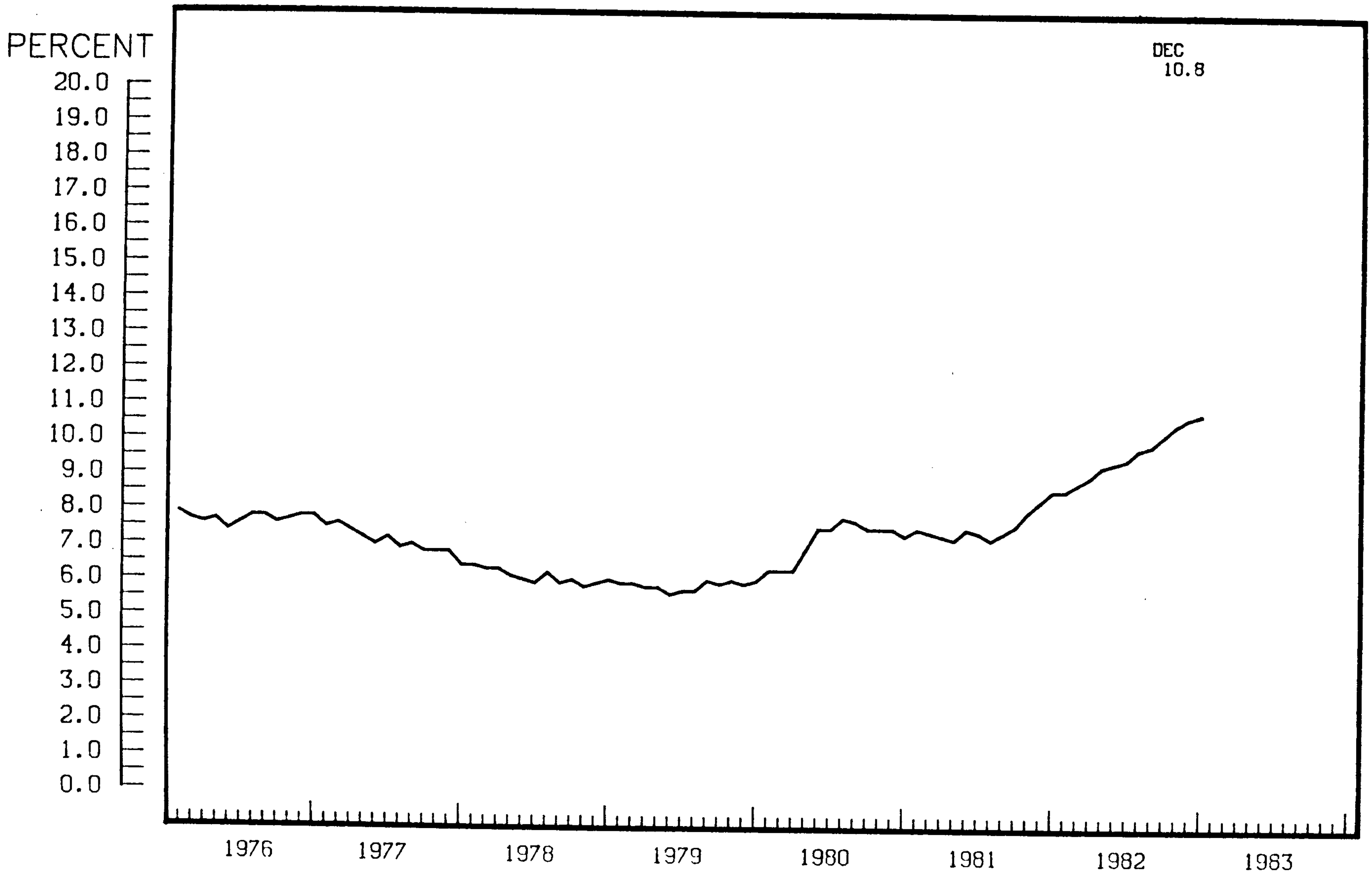


CHART 16

NATIONAL UNEMPLOYMENT RATE 15 WEEKS AND OVER

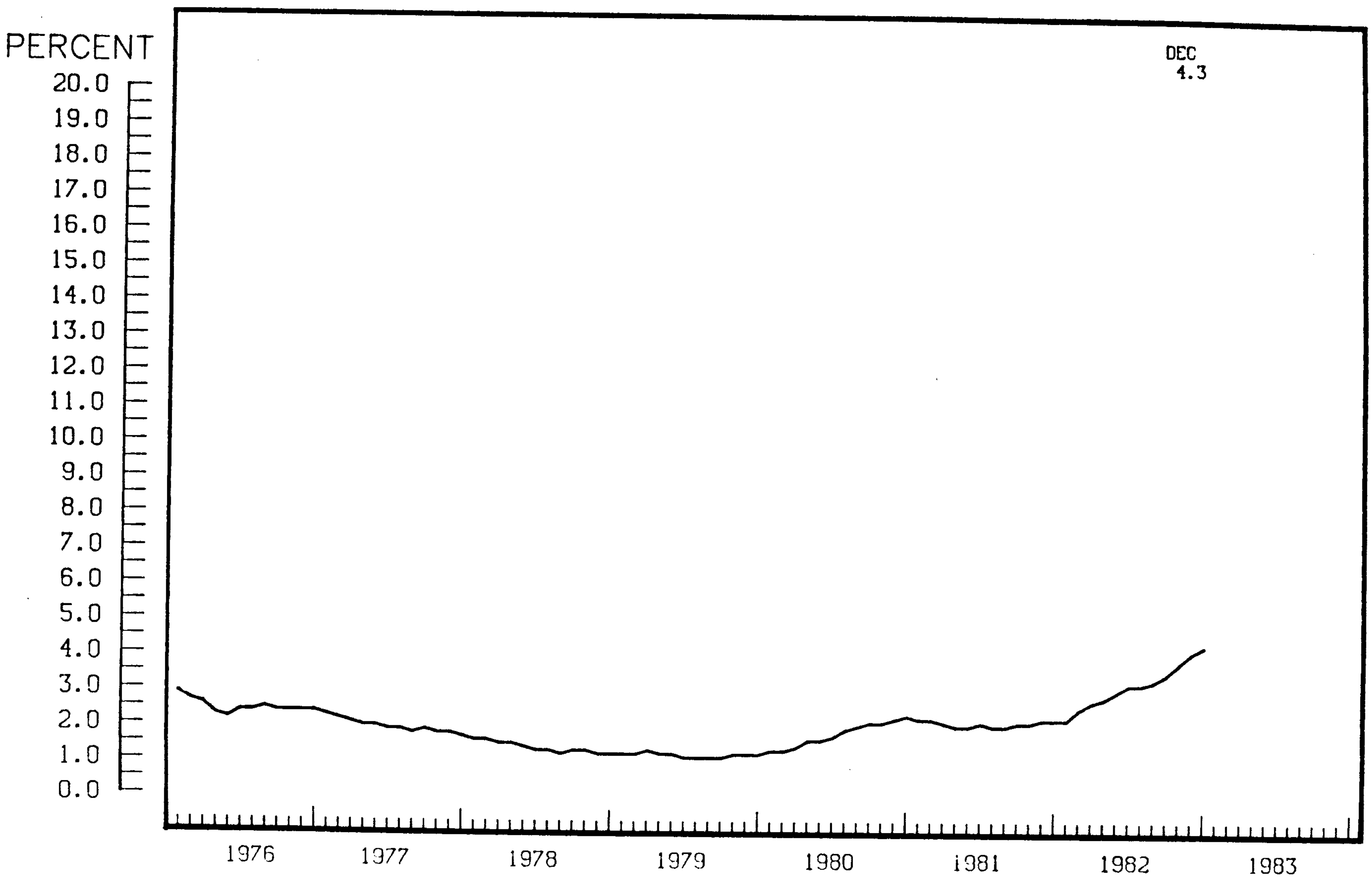


CHART 17

AVERAGE WEEKLY INITIAL CLAIMS FOR STATE UNEMPLOYMENT INSURANCE

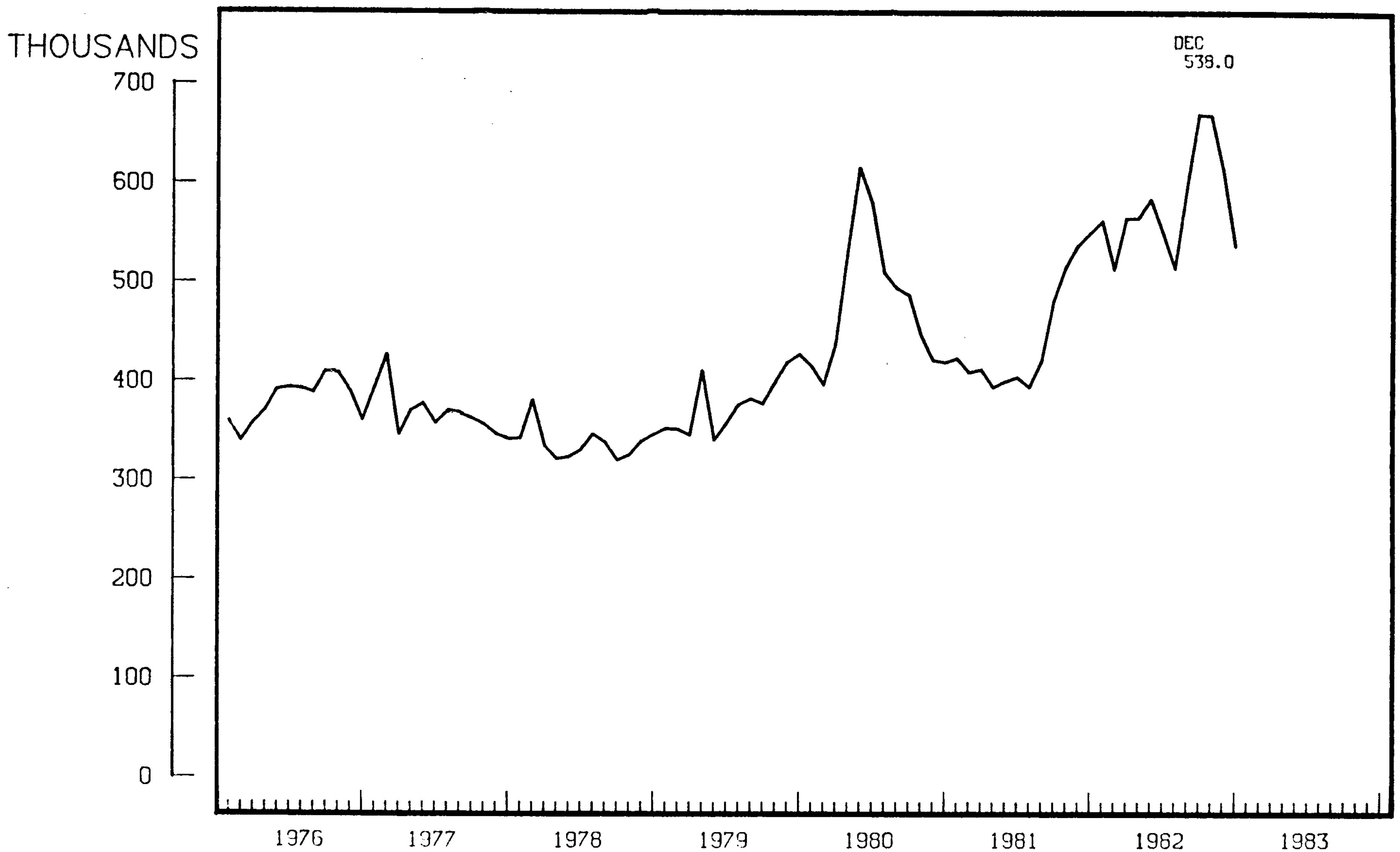


CHART 18

INDEX OF 500 COMMON STOCK PRICES (1967 = 100)

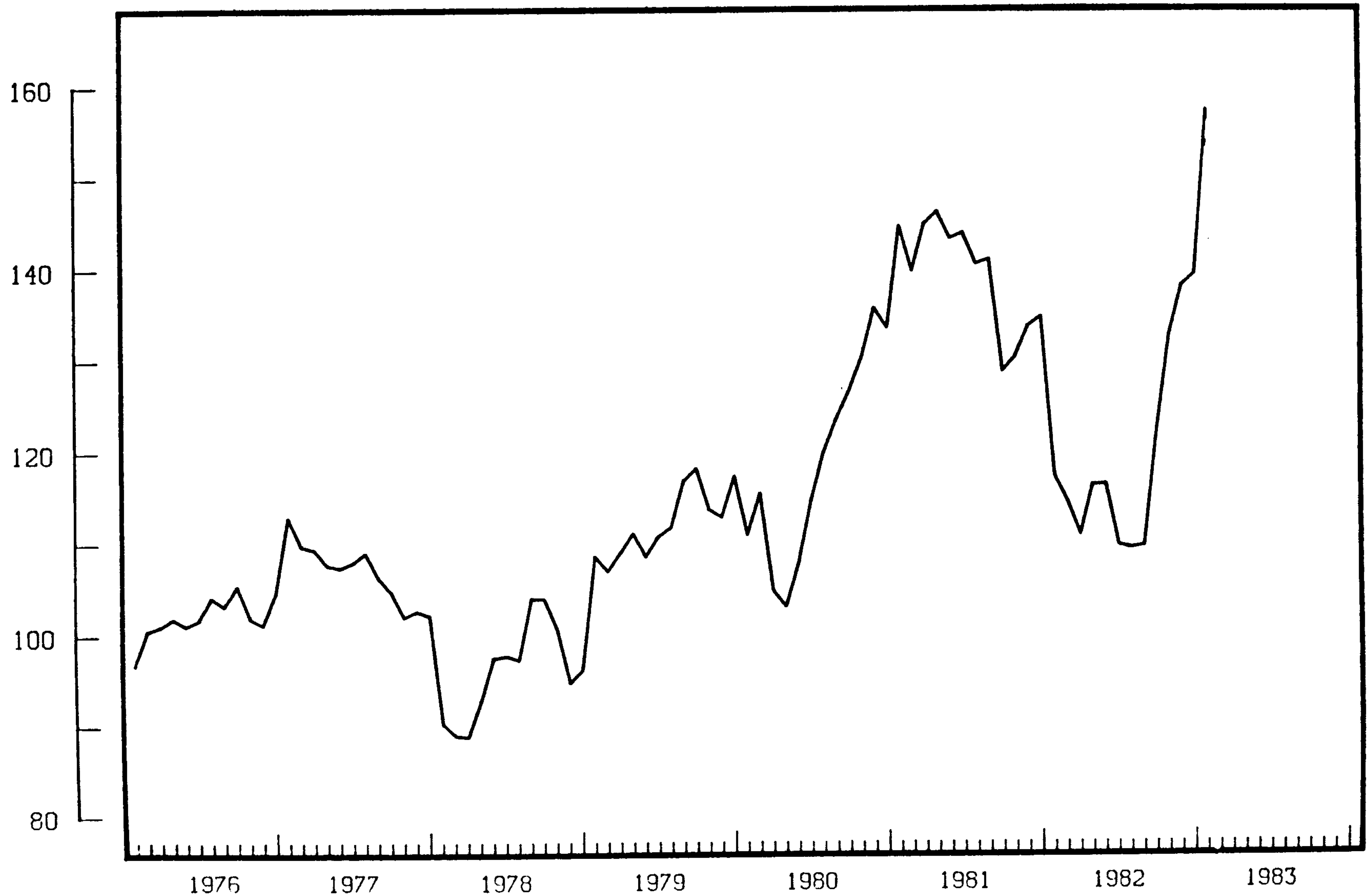


CHART 19

INDEX OF PRIVATE HOUSING STARTS
(1967 = 100)

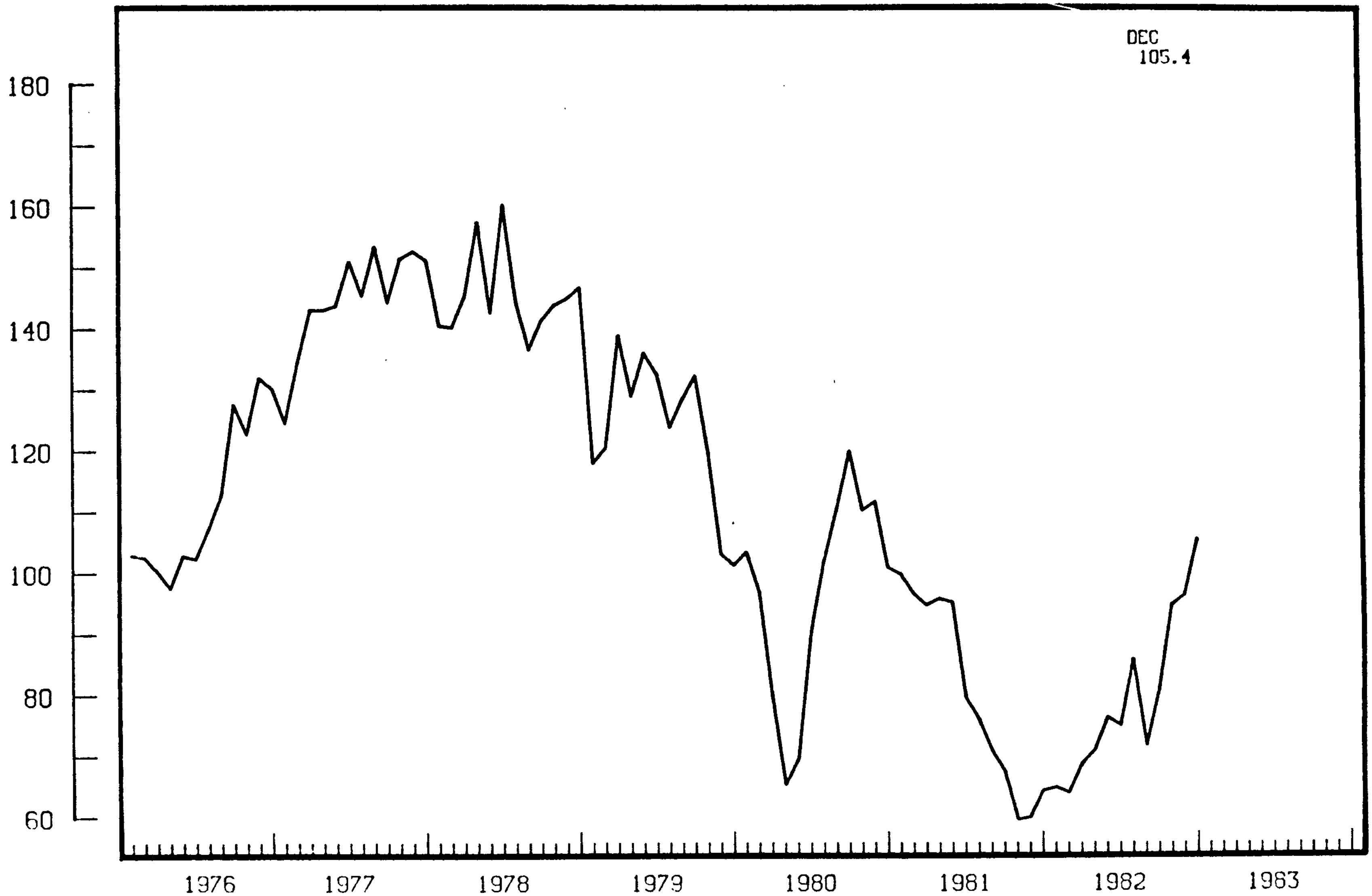
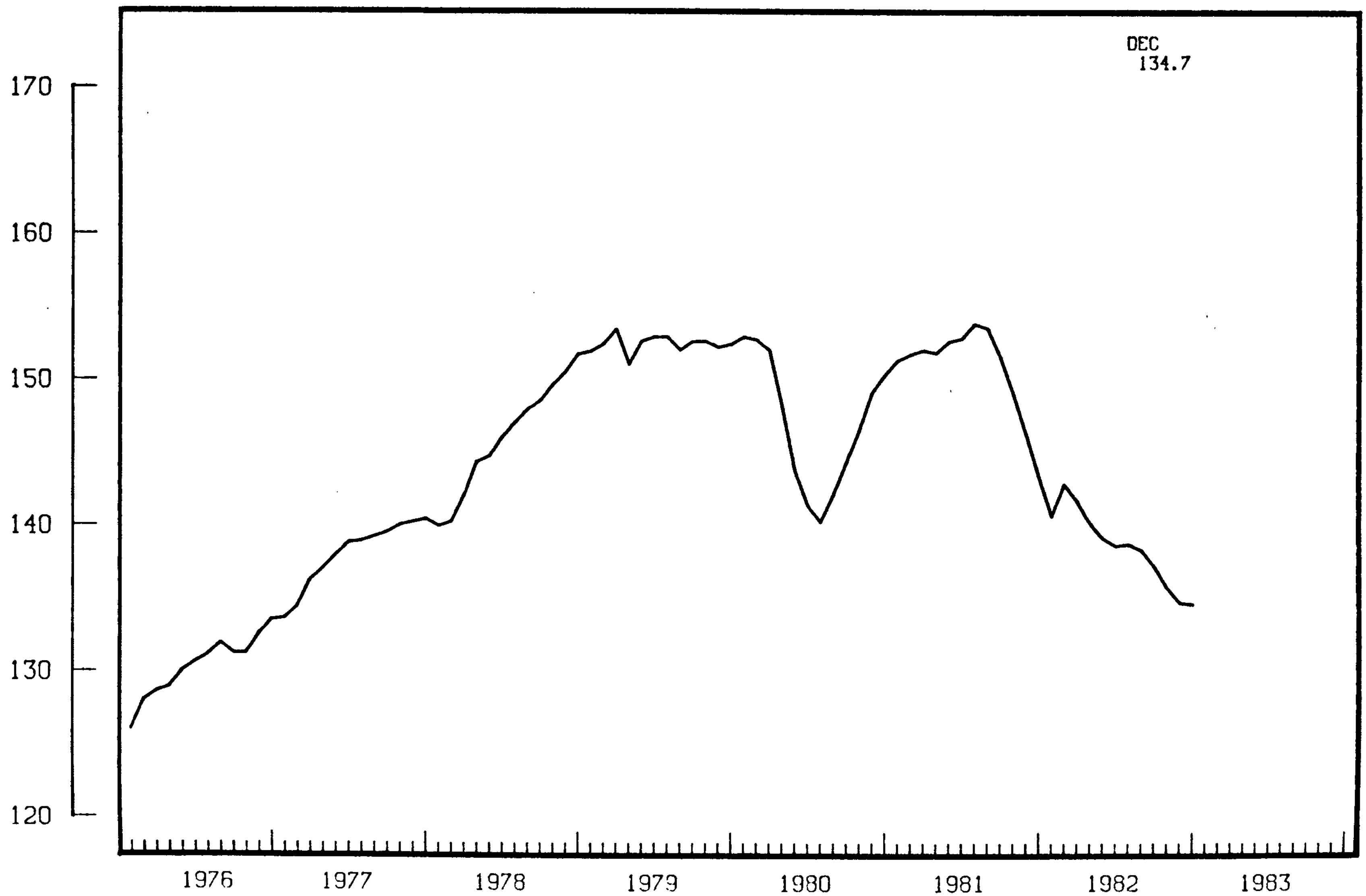


CHART 20

INDEX OF INDUSTRIAL PRODUCTION (1967 = 100)



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PPRG Working Paper 83-3

FORECASTING THE EFFECTS OF REGIONAL ECONOMIC CONDITIONS ON U.S. ARMY RECRUITING

by

Charles Dale

The author is an Economist in the Personnel Policy Research Group of the U.S. Army Research Institute for the Behavioral and Social Sciences. The author is grateful to LTC George Thompson, Juri Toomepuu, Curtis Gilroy, CPT Edward Williams, Ann Orr, and George Abrahams for helpful discussions, and to Brian Baker, Cavan Capps, and Kate Anderson for research assistance. The views expressed in this paper are solely those of the author and not necessarily those of any of the aforementioned individuals or the U.S. Army Research Institute.

This paper was presented at the Eastern Economic Conference, Boston, Massachusetts, March 17-19, 1983.

ABSTRACT

The U.S. Army Recruiting Command has recently begun a three-part research study, designed to manage its limited resources effectively. One part, of which this paper is a preliminary study, consists of identifying macroeconomic variables that may serve as leading indicators of potential recruiting difficulties. The second part will identify internal institutional factors that may pinpoint potential problems. The final part will be the creation of a decision support system that the Recruiting Command may use to reallocate resources when necessary.

I. INTRODUCTION

In recent years the Army has been very successful in attracting high-quality enlistees. There are many reasons for this, but economic factors undoubtedly play a significant role. The Army has a vital interest in trying to determine how long these favorable recruiting trends will continue.

This paper describes the early stages of a search for a series of leading economic indicators that could alert the Army Recruiting Command to potential recruiting difficulties. We concentrate on the Northeast Regional Recruiting Region. The preliminary results indicate that there is no single economic variable that can predict recruiting success, but unemployment rates and levels of educational benefits appear to be significant factors.

II. THE THREE VOLUNTEER ARMIES

Three very different types of recruiting environments are shown in Charts 1 through 5, which are taken from Thurman (1982). During the first years of the all-volunteer force (AVF), the Army had several factors in its favor, as shown in Chart 1. The youth population and unemployment were increasing, military wages were kept comparable with civilian wages, and the GI Bill was still in effect. The Army had adequate recruiting resources, which it obtained partly because of the uncertainty associated with the advent of the AVF.

The situation changed in the period from 1976 to 1980. Although the youth population continued to increase, economic factors began to turn against the Army. Unemployment declined, military wages began to lag behind civilian wages, the GI Bill was replaced by a contributory educational program, and recruiting resources were cut. By 1979, the Army fell far short of its recruiting mission.

The recruiting situation changed dramatically after 1980. Recruiters' expectations became more realistic, due in part to recognition that the youth cohort was beginning a long-term decline that would make recruiting more difficult. At the same time, recruiting was helped markedly by the introduction of a variable housing allowance, by increasing unemployment, and more by recruiting resources and educational incentives. Pay comparability was restored with increases of 11 percent, 14 percent, and 4 percent in fiscal years 1980, 1981, and 1982, respectively.

Results for recruiting and retention for the three periods of the AVF are shown on Chart 2. The difficulties of the middle period, 1976 to 1980, are quite clear. There were not only problems with achieving the Army's recruiting mission, but retention rates among those with 5 to 10 years of service dropped sharply, and there was a marked decline in the number of enlistees who scored in the upper half of the Armed Forces Qualification Test (AFQT). In recent years, recruiting and retention have improved greatly.

It is difficult to determine the importance in the enlistment decision of nonquantifiable factors, such as patriotism and the improving image of the military. Nonetheless, an overall estimate of youths' propensity to enlist is attempted by the Youth Attitude Tracking Study (YATS). Chart 3 shows that in recent years youths are much more likely to consider enlisting, although economic factors cannot be separated from other factors.

Economic and demographic factors that affect enlistments are shown on Charts 4 and 5. It is uncertain what levels of aid will be available for higher education, which competes with the Army for young males, and population trends are clearly unfavorable. All the other factors shown (i.e., unemployment, education incentives, pay, and recruiting resources), have been very favorable for the last few years. The Army is very interested in how long these favorable trends may continue.

III. RECRUITING IN THE NORTHEAST — THE SEARCH FOR A LEADING INDICATOR

The Northeast has typically supplied the Army with a significant percentage of its male high school graduates (see Table 1). This section describes our early attempts to identify a leading indicator for recruiting problems in this region.

The number of Army enlistments of male high school graduates for the Northeast region is shown on Chart 6. Enlistees do not always enter the Army immediately. They may sign a contract, and enter later under the delayed entry program (DEP). The data in Chart 6 captures this phenomenon and show when enlistees actually signed contracts. This is important from the point of view of economic theory, since contract signing is supply-determined, by the enlistee. Time of actual accession, on the other hand, may be demand-determined by the recruiters, who work on quarterly missions.

The surge to sign contracts before the December 1976 expiration of the GI Bill shows clearly on Chart 6, followed by a steep drop. There was another sharp drop in early 1978, and then a gradually improving trend. We wish to identify leading indicators of this type of activity.

Unemployment rates for seven states in the region are shown in Charts 7 through 13. In light of the correlation between aggregate unemployment rates and national enlistment rates described in the last section, it is surprising that state unemployment rates are not better indicators of regional enlistment rates.

Despite conventional wisdom that characterizes the Northeast as a declining region that is rapidly losing jobs, capital, and people to the South and West, most states in the region have fared relatively well. Massachusetts and New Hampshire have only recently showed steep rises in unemployment. New York, Connecticut, Maryland, and New Jersey have held remarkably steady. Only Pennsylvania, with its heavy dependence on smoke-stack industries, has had unemployment that is consistently worse than the national average. Even in the case of Pennsylvania, there have been no sudden sharp changes that might have been a useful indicator to the Army Recruiting Command.

At least two explanations for the dismal performance of state unemployment rates as leading indicators are possible. First, other factors, such as educational benefits, may have equal importance. Second, there is some question about the accuracy of the state unemployment estimates (see Bureau of Labor Statistics, 1980). Third, most state unemployment rates are not reported at the same time as the national rate, so there is a built-in delay in providing information on how good or bad job market prospects are.

If measurement is indeed a significant problem, then national indicators may avoid some of them, because of offsetting errors in different regions. The next section investigates this possibility.

IV. NATIONAL LEADING ECONOMIC INDICATORS

Table 1 shows that the share of male high school graduate enlistees as a percentage of the national total has been approximately constant over the past several years. Thus it is possible that a national indicator might be useful for regional prediction. National economic indicators would also be useful, simply because they are more readily obtainable than are state data.

There have been a number of studies that examined the relationship between economic variables and Army enlistments (see, for example, Dale and Gilroy, 1983; Daula et al., 1982; Baldwin et al., 1982; and Kalinich and Wenzel, 1982). None of them, however, attempted to concentrate on regional recruiting.

Charts 14 through 20 show several of the well-known indicators of economic activity. The composite index of 12 leading indicators shows some dramatic movements, but they do not lead or correlate very well with recruiting results. Similarly, the national unemployment rate has changed too gradually to be useful. The long-term unemployment rate, 15 weeks or longer, has been surprisingly and consistently low until very recently.

Initial claims for state unemployment insurance (Chart 17) may eventually prove useful. Again there is only a loose relationship between this indicator and enlistments, but a sudden sharp drop in unemployment claims could mean that recruiting difficulties will follow. This indicator will be investigated more closely in further studies of the Northeast and other regions.

Finally, the indexes of stock prices, housing starts, and industrial production were tried, primarily for completeness. The industrial production index is more of a coincident indicator than a leading indicator, and the other two indexes are closely linked to financial factors, such as interest rates. Thus none of them appears particularly useful.

The author was prepared to attempt all sorts of sophisticated techniques to determine the importance of different indicators, lag lengths, etc. It is clear at this point, however, that such analyses would be premature. At least for high school graduates, factors such as the availability of educational incentives appear to be just as important as aggregate economic variables.

V. CONCLUSIONS

Unemployment rates have recently been a fairly reliable indicator of success rates of Army recruiters. If the economy of the Northeast continues to improve more rapidly than other parts of the country, then that region may cease to be fertile ground for recruiting.

TABLE 1

ARMY ENLISTMENTS OF MALE HIGH SCHOOL GRADUATES
RESULTS BY RECRUITING REGIONS
(Thousands of Contracts)

	Fiscal Year 1977	1978	1979	1980	1981	1982 (9 months)
Northeast	26.9 21.7%	19.5 22.0%	14.7 21.6%	14.7 21.2%	15.5 21.0%	14.7 21.9%
Southeast	35.4 28.6%	26.7 30.2%	20.6 30.2%	18.5 26.6%	18.7 25.3%	16.3 24.3%
Southwest	17.5 14.2%	13.3 15.0%	10.4 15.3%	10.6 15.2%	10.5 14.2%	8.8 13.1%
Midwest	26.3 21.3%	19.2 21.7%	13.9 20.4%	16.3 23.5%	19.5 26.3%	17.8 26.7%
West	17.5 14.2%	9.8 11.1%	8.6 12.6%	9.4 13.5%	9.7 13.2%	9.4 14.1%
TOTAL	123.7 100%	88.5 100%	68.0 100%	69.5 100%	74.0 100%	67.0 100%

Notes:

Fiscal year 1977 results include the December 1976 bulge due to expiration of the GI Bill.

The Northeast Recruiting Region includes District Recruiting Centers (DRCs) at Boston, Massachusetts; Concord, New Hampshire; New Haven, Connecticut; Albany, Long Island, Newburg, and Syracuse, New York; Fort Monmouth, New Jersey; Harrisburg, Philadelphia, and Pittsburgh, Pennsylvania; and Baltimore, Maryland. A DRC at Niagara Falls, New York, was closed in 1982 and consolidated with Syracuse and Pittsburgh.

CHART 1

THREE VOLUNTEER ARMIES

73–76

- HIGH UNCERTAINTY
- INCREASING YOUTH COHORT
- INCREASING UNEMPLOYMENT
- PAY COMPARABILITY
- GI BILL
- ADEQUATE RCTG RESOURCES

76–80

- OVER-CONFIDENCE
- COHORT CONTINUED TO INCREASE
- LOW UNEMPLOYMENT
- LOST PAY COMPARABILITY
- END OF GI BILL
- RECRUITING RESOURCES CUT

80–82

- REALISTIC EXPECTATION
- COHORT DECLINES
- INCREASING UNEMPLOYMENT
- RESTORATION OF
  - PAY COMP (11, 14%)
  - ED INCENT
  - RCTG RES
- VAR HOUSING ALLOW INTRO

73 74 75 76 77 78 79 80 81 82

CHART 2

RESULTS IN RECRUITING AND RETENTION

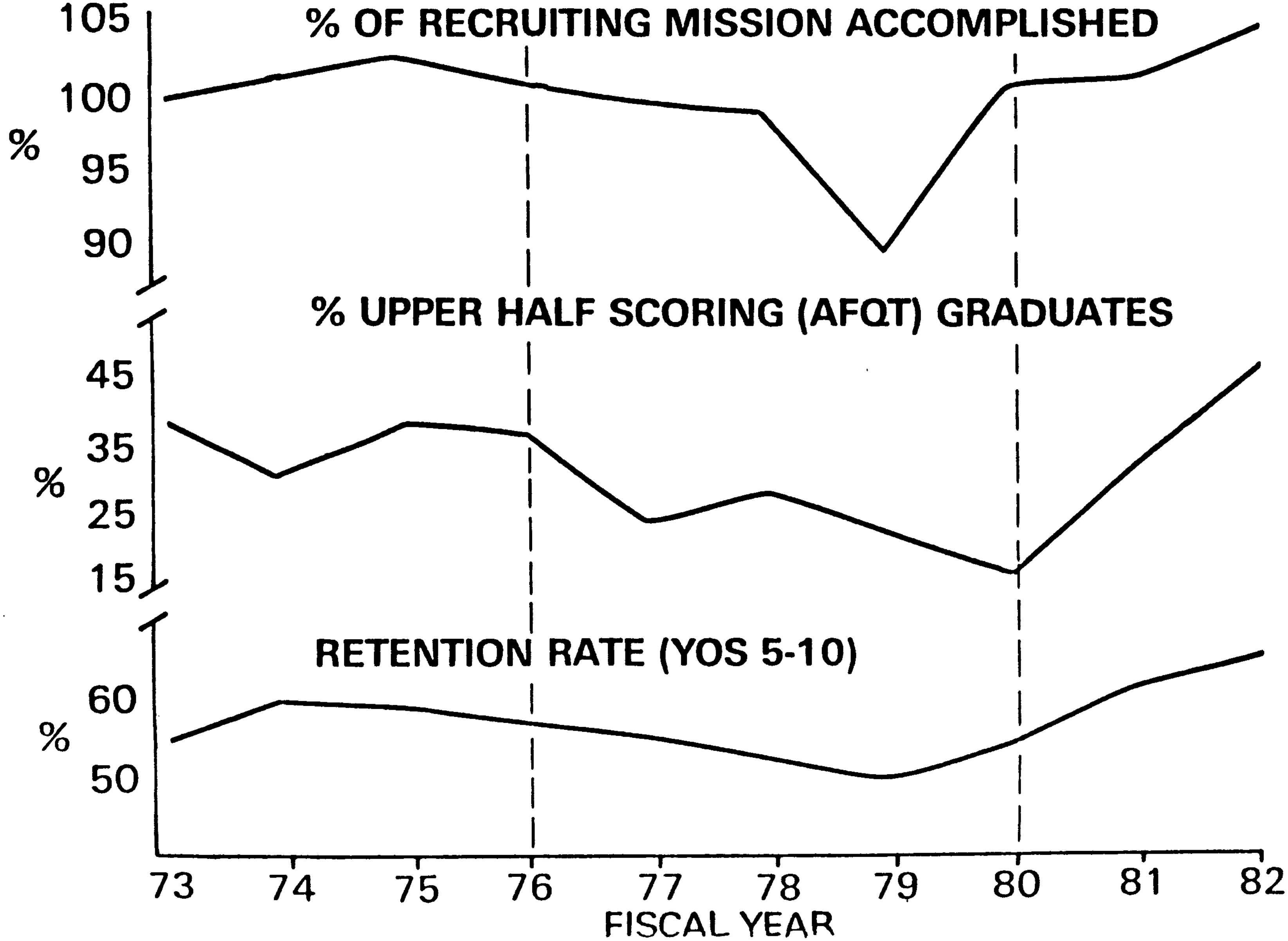
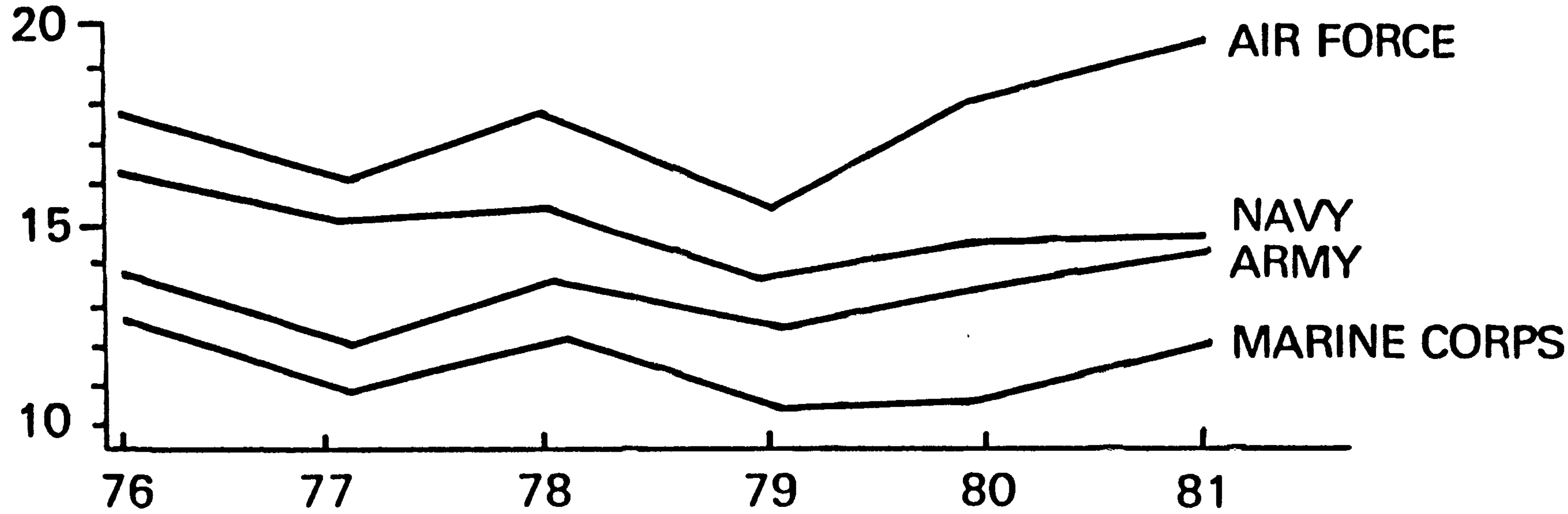


CHART 3

NATIONAL TRENDS IN PROPENSITY



SOURCE: YOUTH ATTITUDE TRACKING STUDY; INCLINED TOWARD SERVICE

CHART 4

ENVIRONMENTAL CONDITIONS

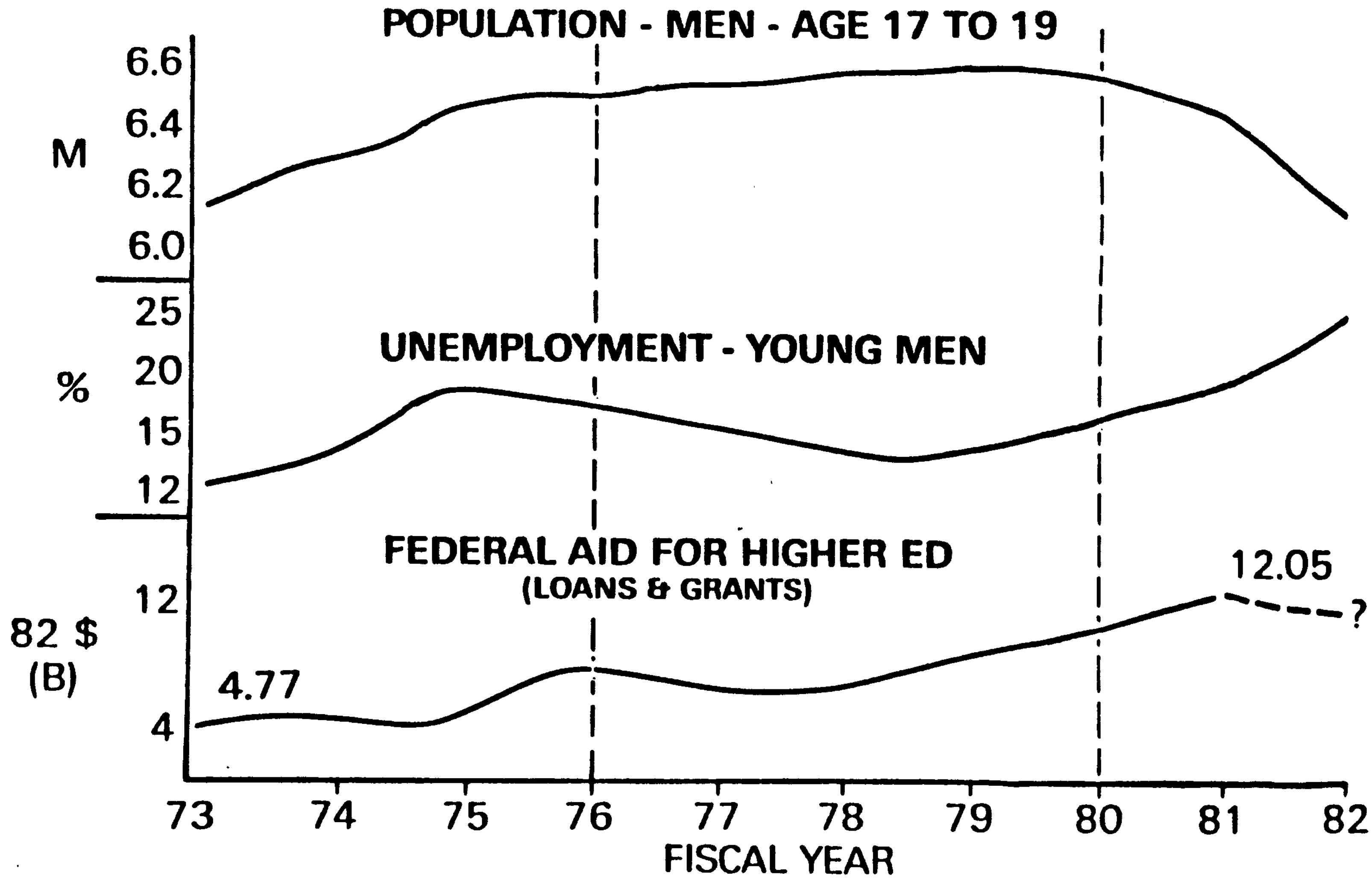


CHART 5

INCENTIVES AND RECRUITING RESOURCES
(1982 DOLLARS)

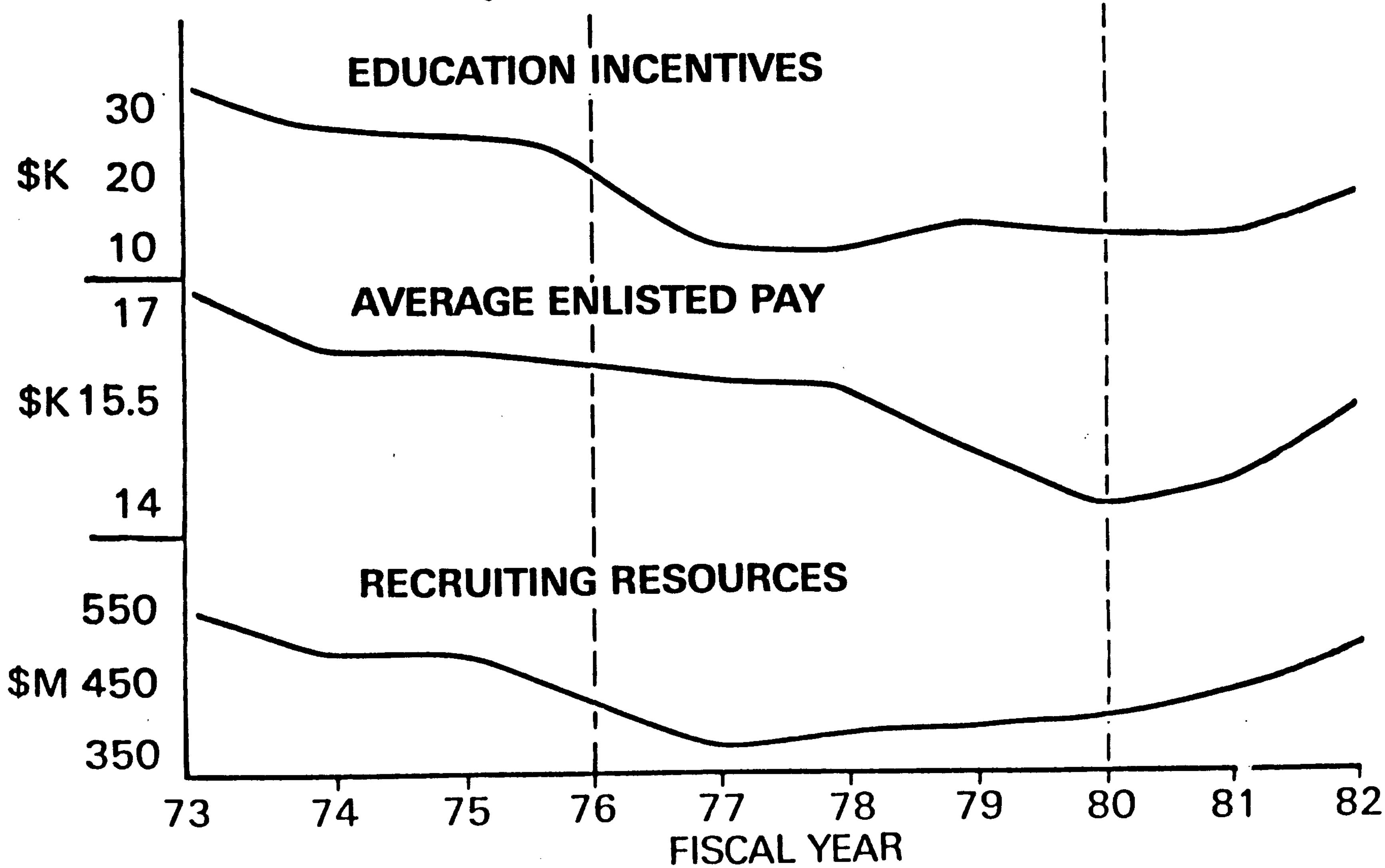


CHART 6

ARMY ENLISTMENTS OF MALE HIGH SCHOOL GRADUATES - NORTHEAST REGION

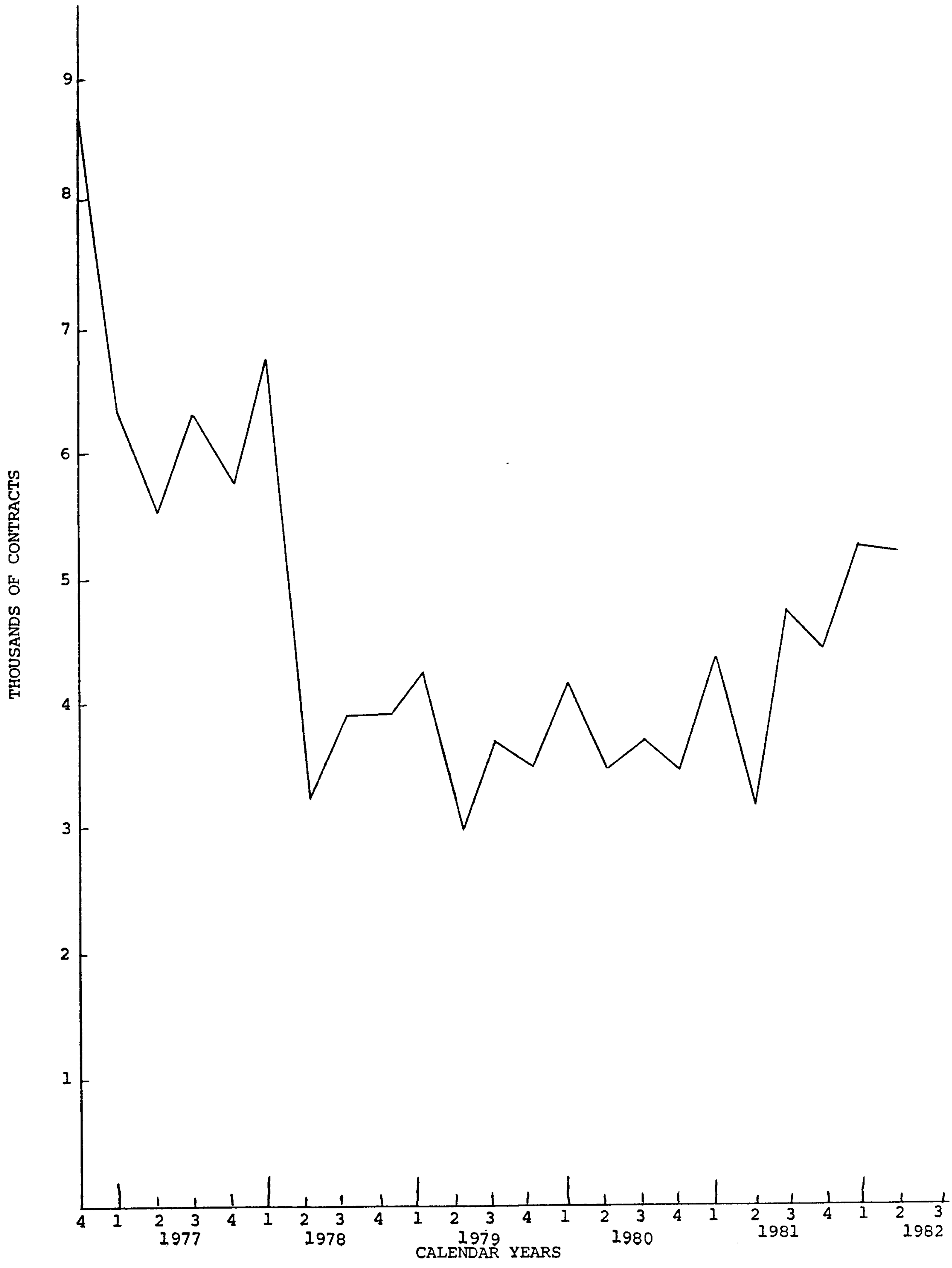


CHART 7

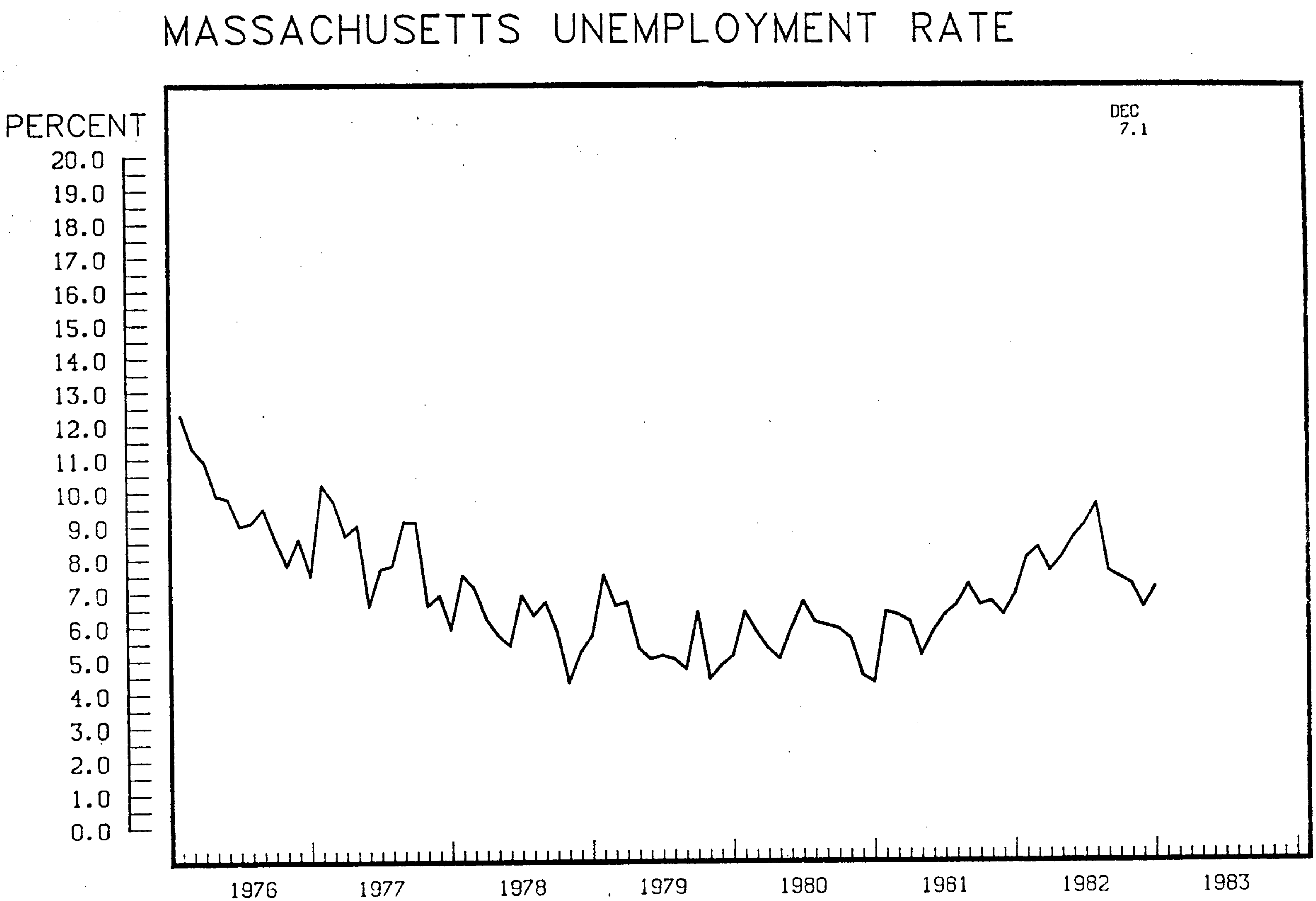

MASSACHUSETTS UNEMPLOYMENT RATE
PERCENT
20.0
19.0
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
DEC
7.1
1976
1977
1978
1979
1980
1981
1982
1983

CHART 8

NEW HAMPSHIRE UNEMPLOYMENT RATE

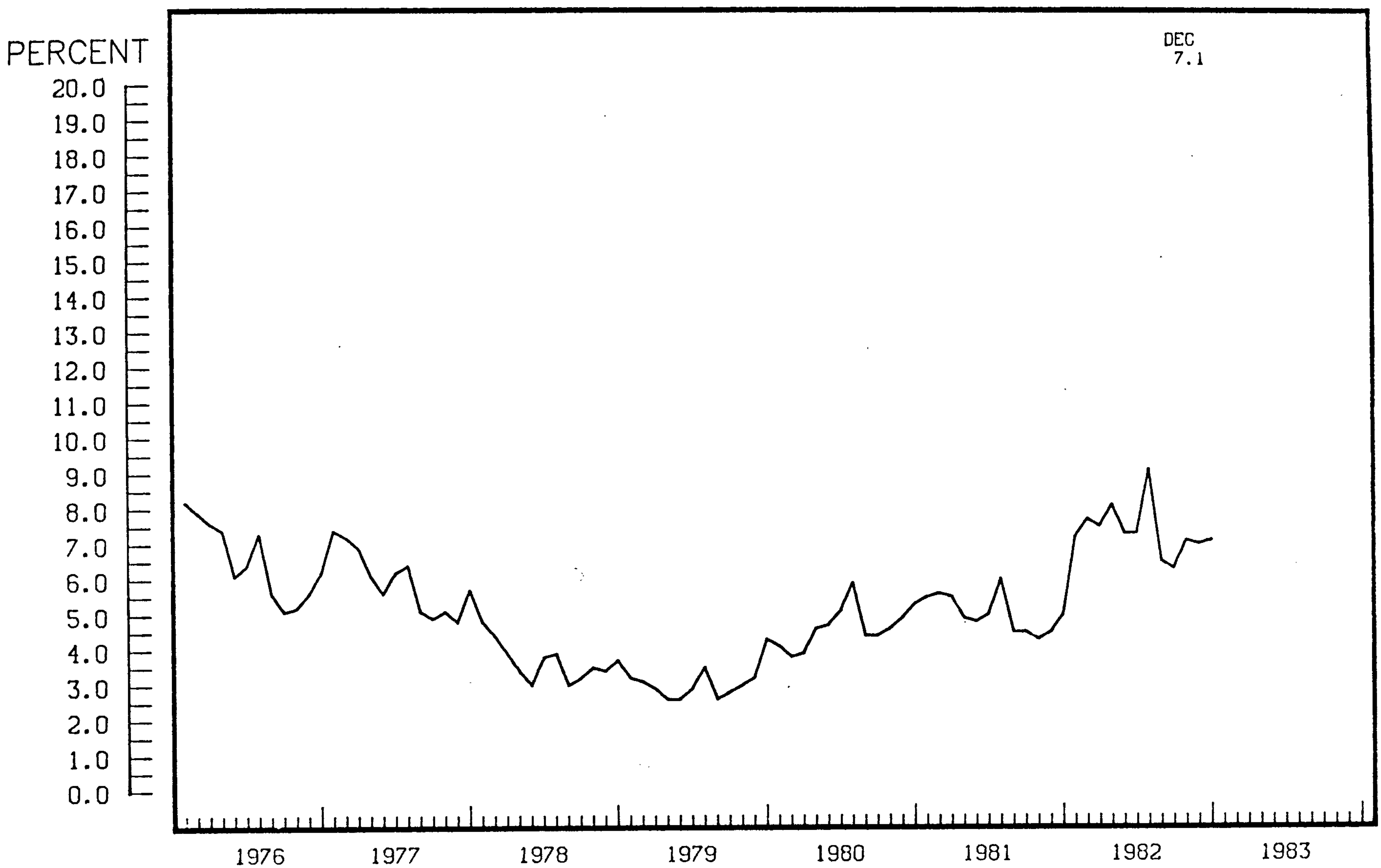


CHART 9

NEW YORK UNEMPLOYMENT RATE

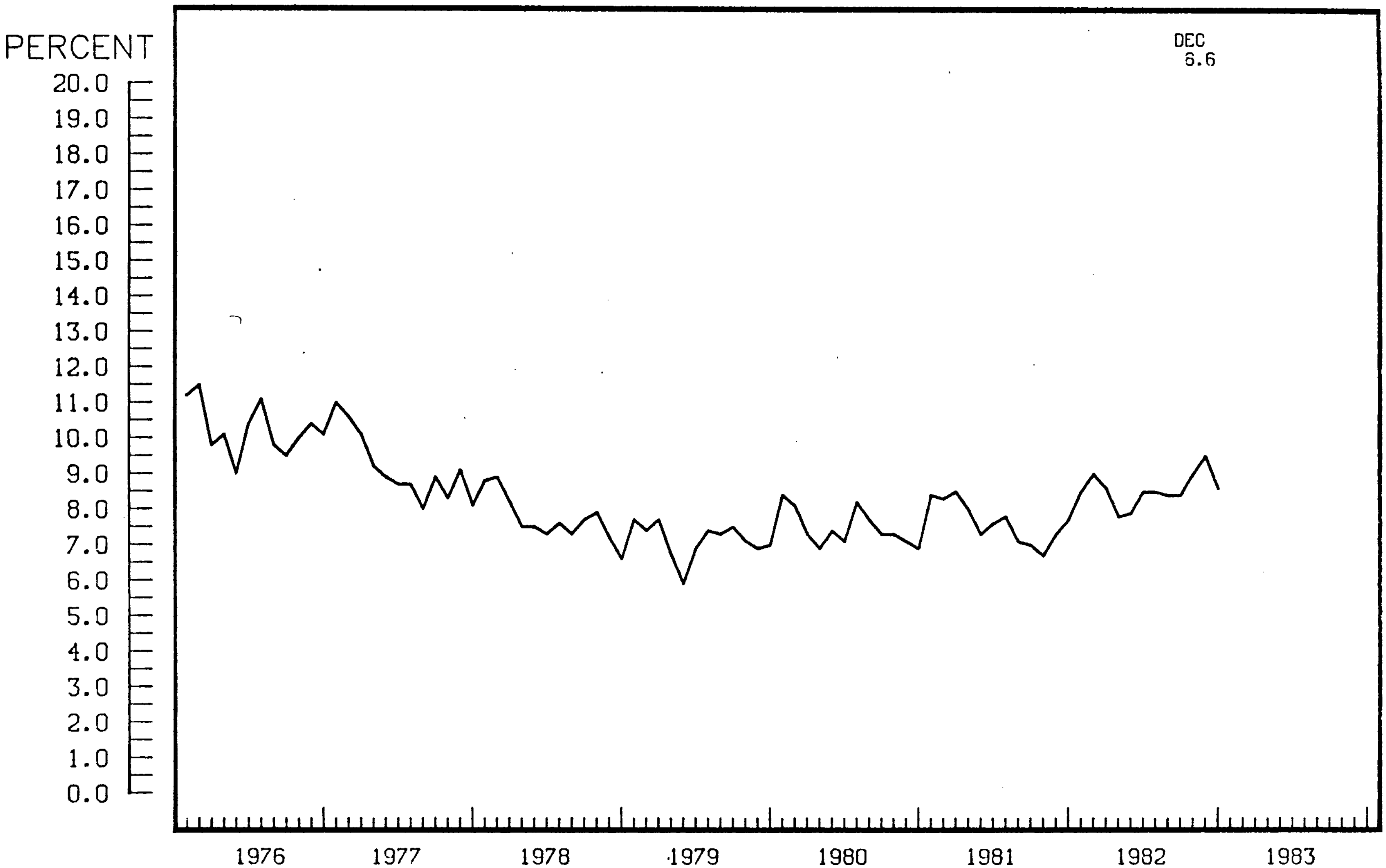


CHART 10

CONNECTICUT UNEMPLOYMENT RATE

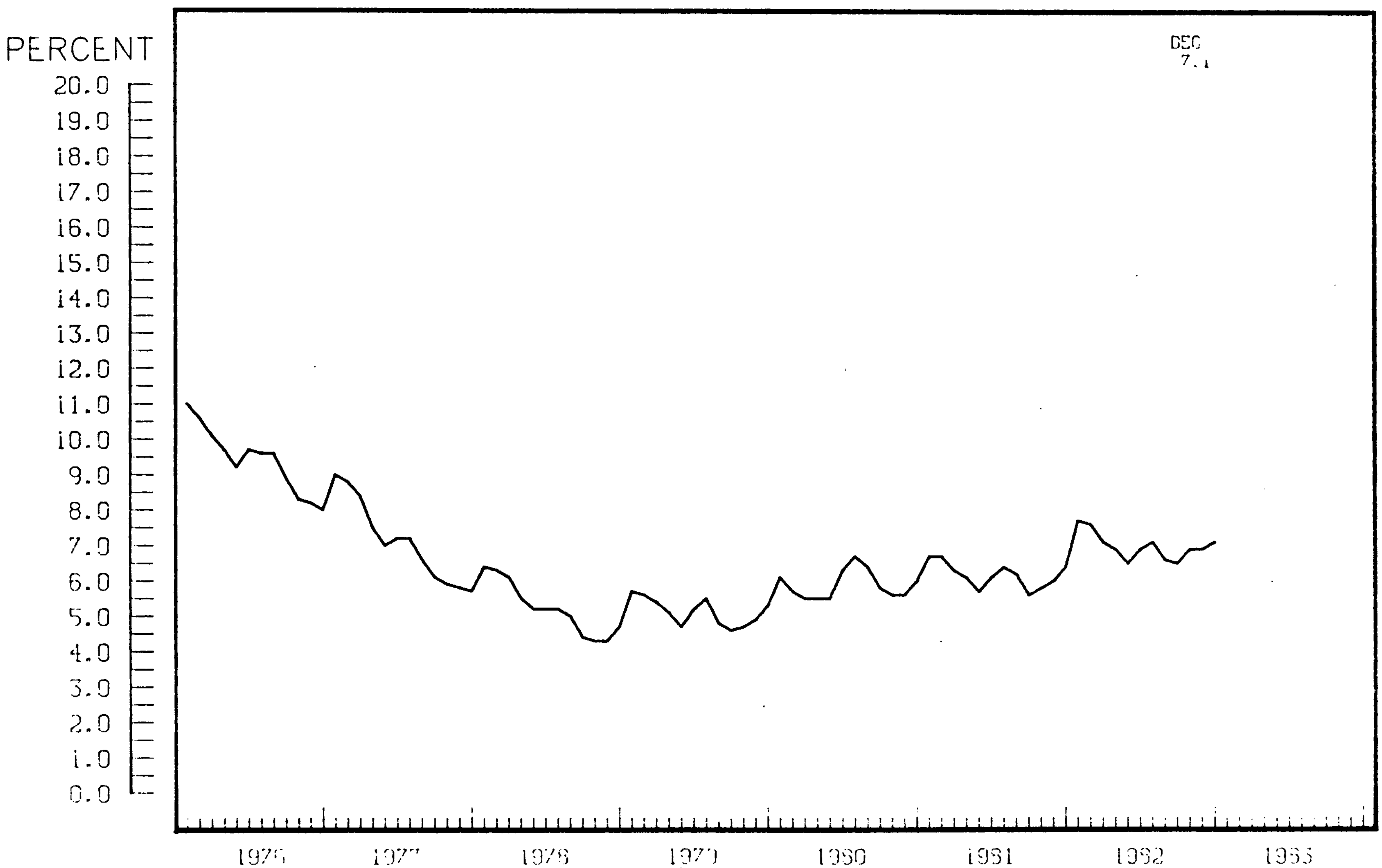


CHART 11

MARYLAND UNEMPLOYMENT RATE

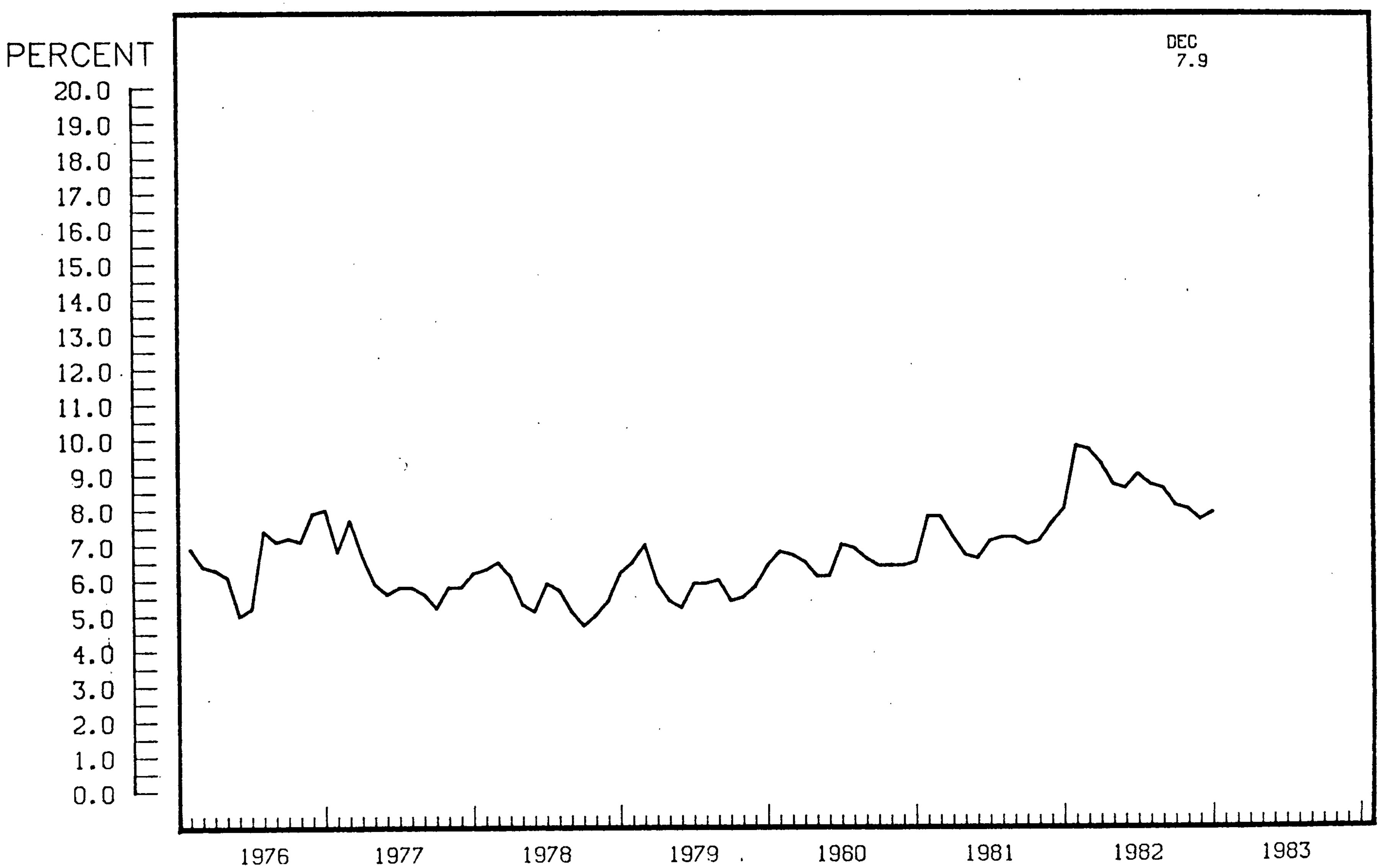


CHART 12

NEW JERSEY UNEMPLOYMENT RATE

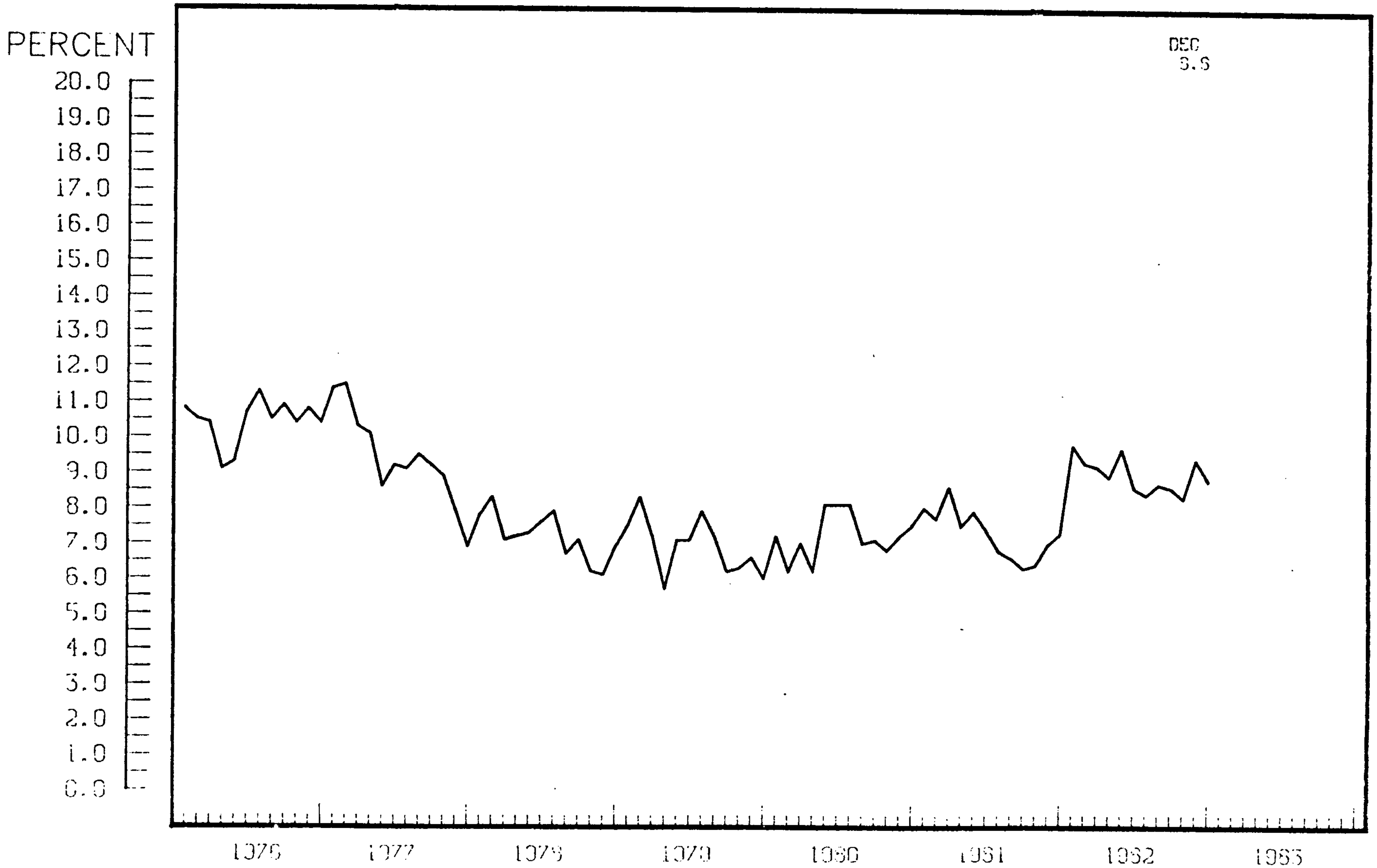


CHART 13

PENNSYLVANIA UNEMPLOYMENT RATE

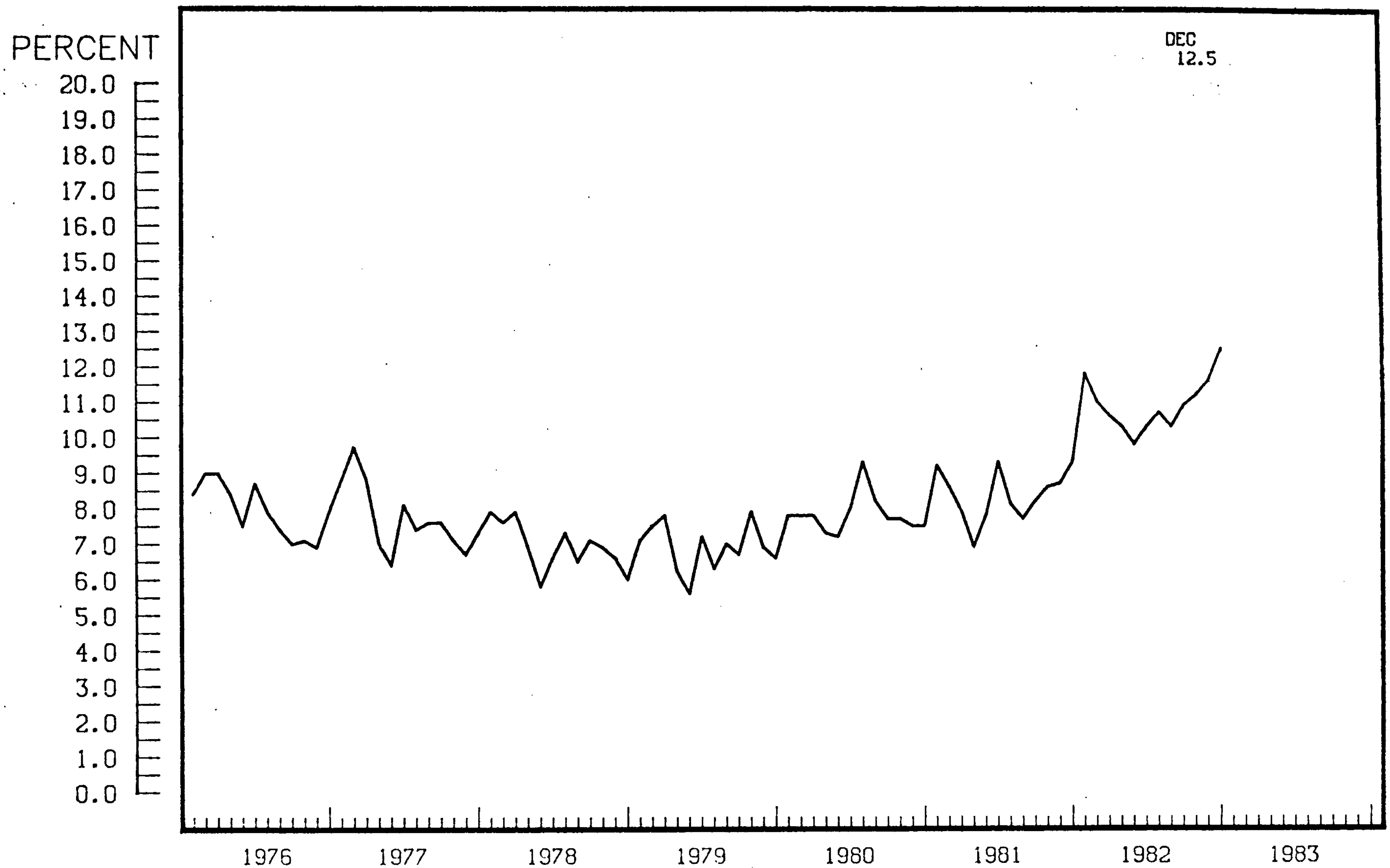


CHART 14

INDEX OF 12 LEADING INDICATORS
(1967 = 100)

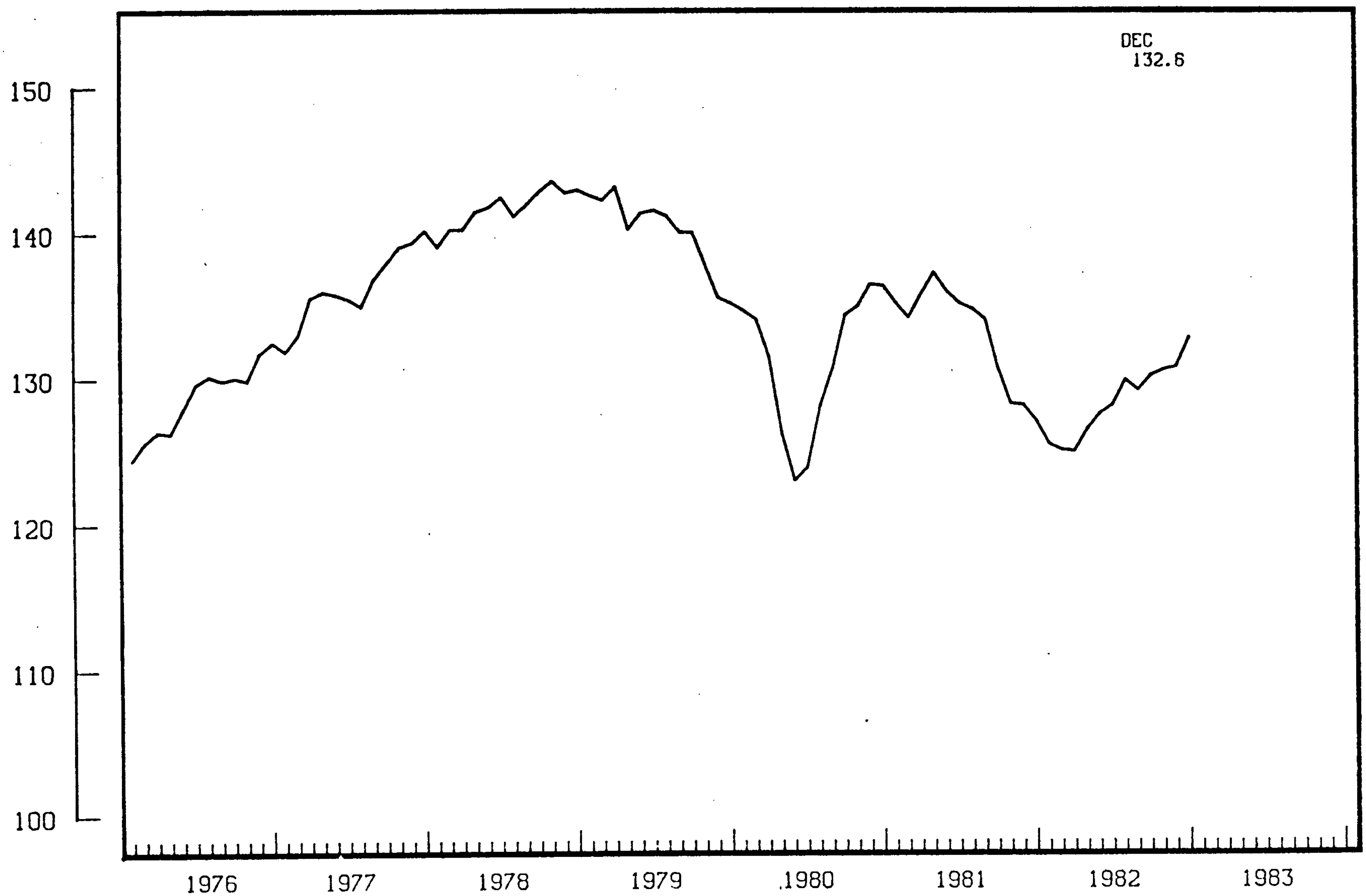


CHART 15

NATIONAL UNEMPLOYMENT RATE

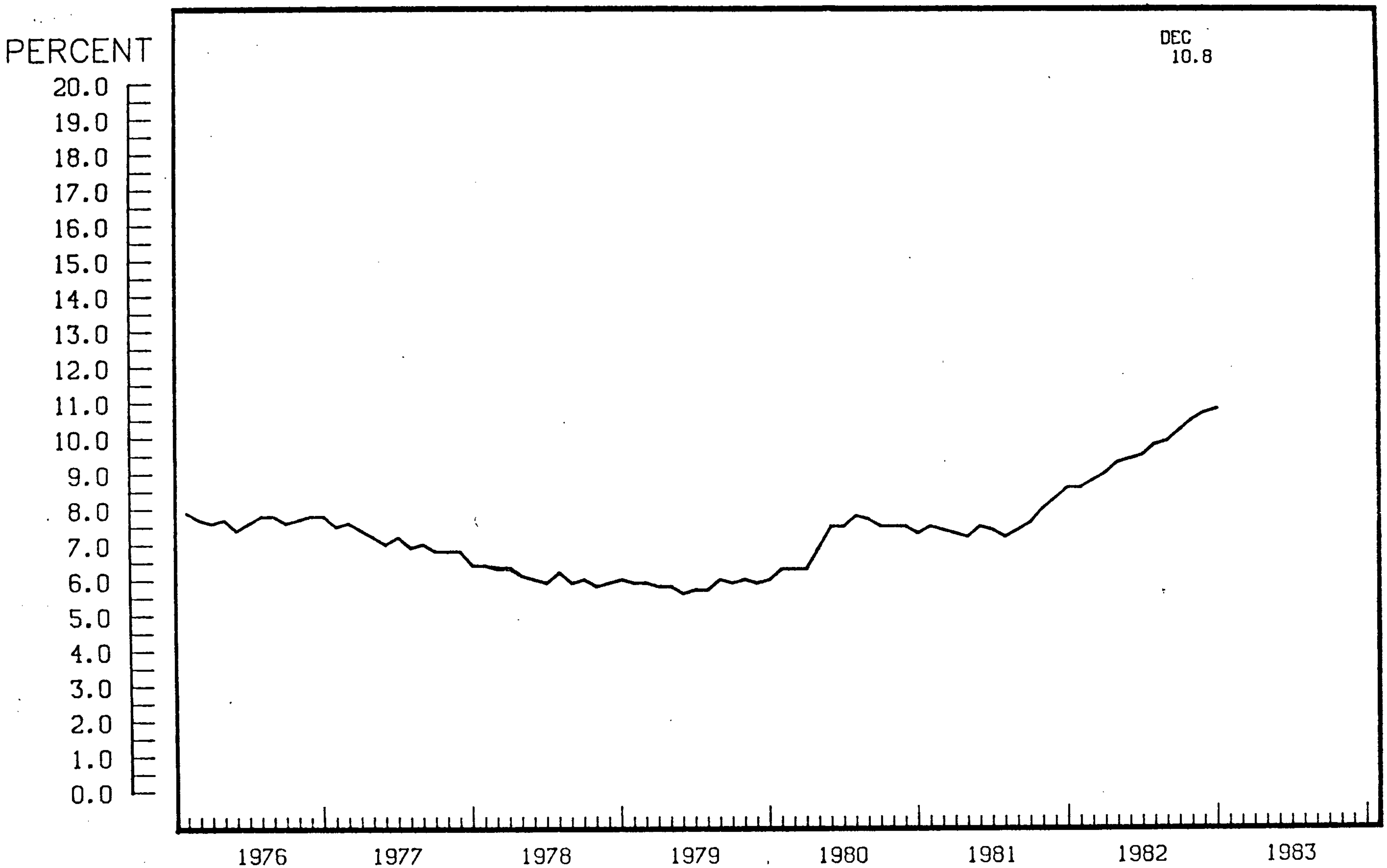


CHART 16

NATIONAL UNEMPLOYMENT RATE
15 WEEKS AND OVER

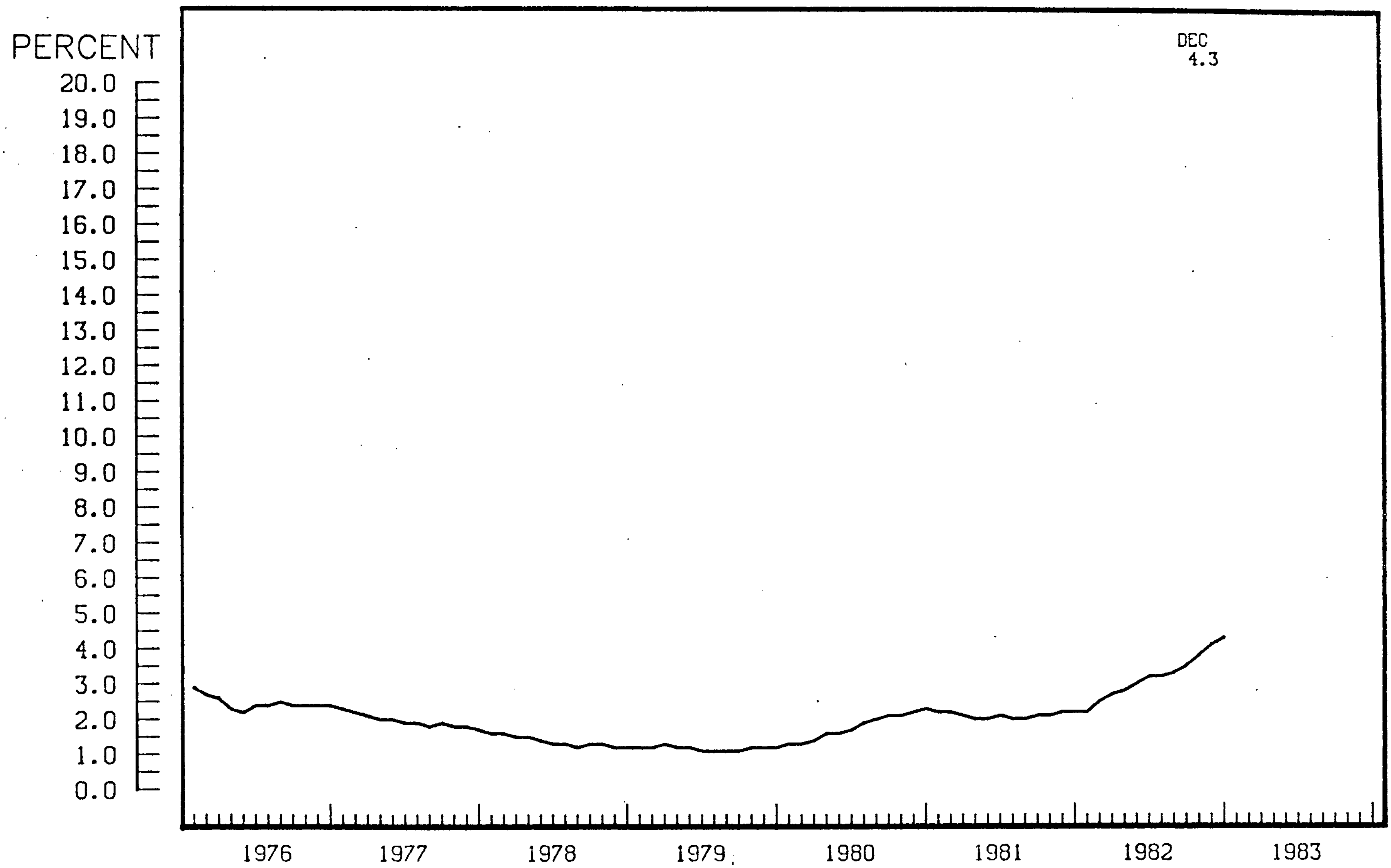


CHART 17

AVERAGE WEEKLY INITIAL CLAIMS FOR STATE UNEMPLOYMENT INSURANCE

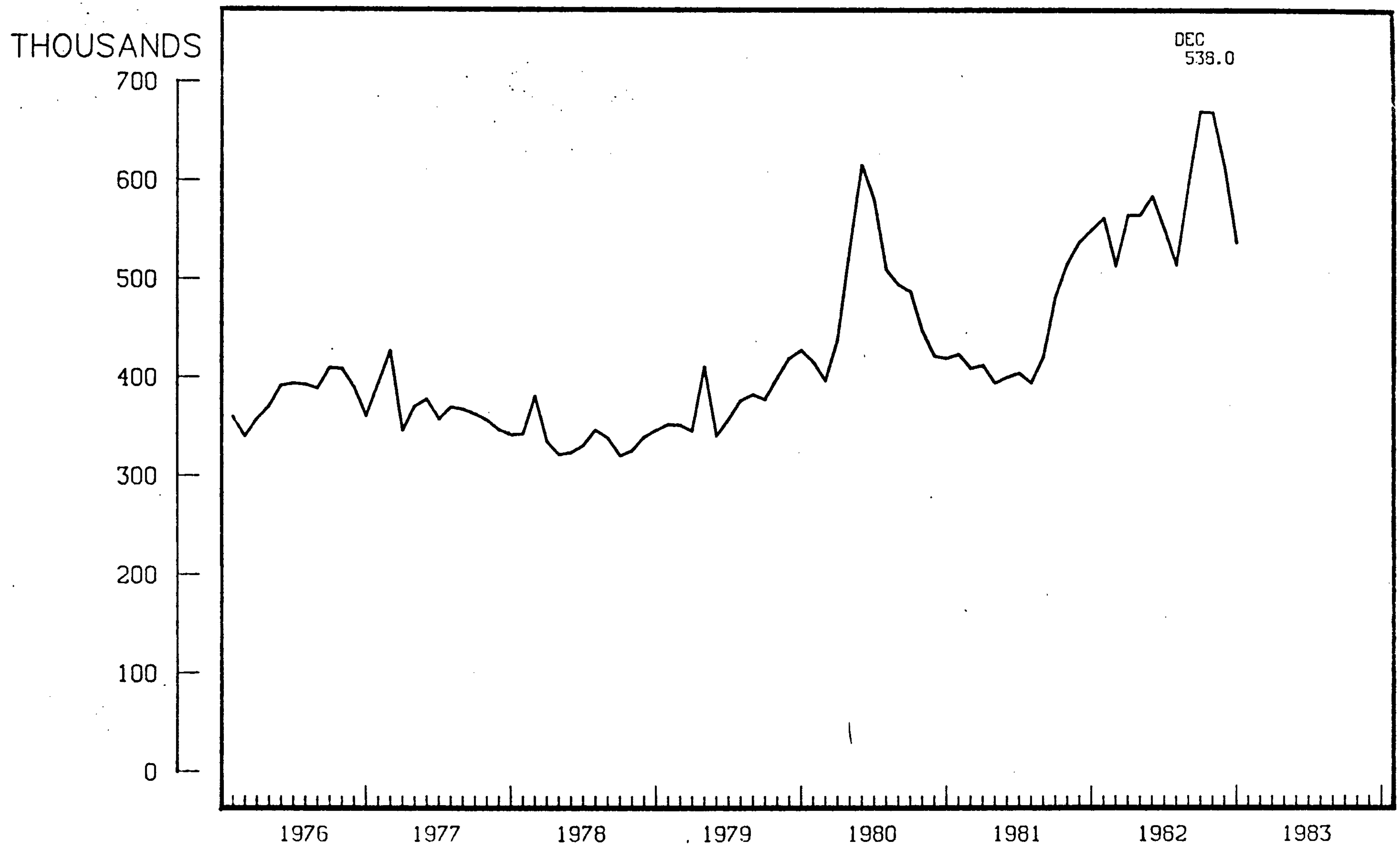


CHART 18

INDEX OF 500 COMMON STOCK PRICES
(1967 = 100)

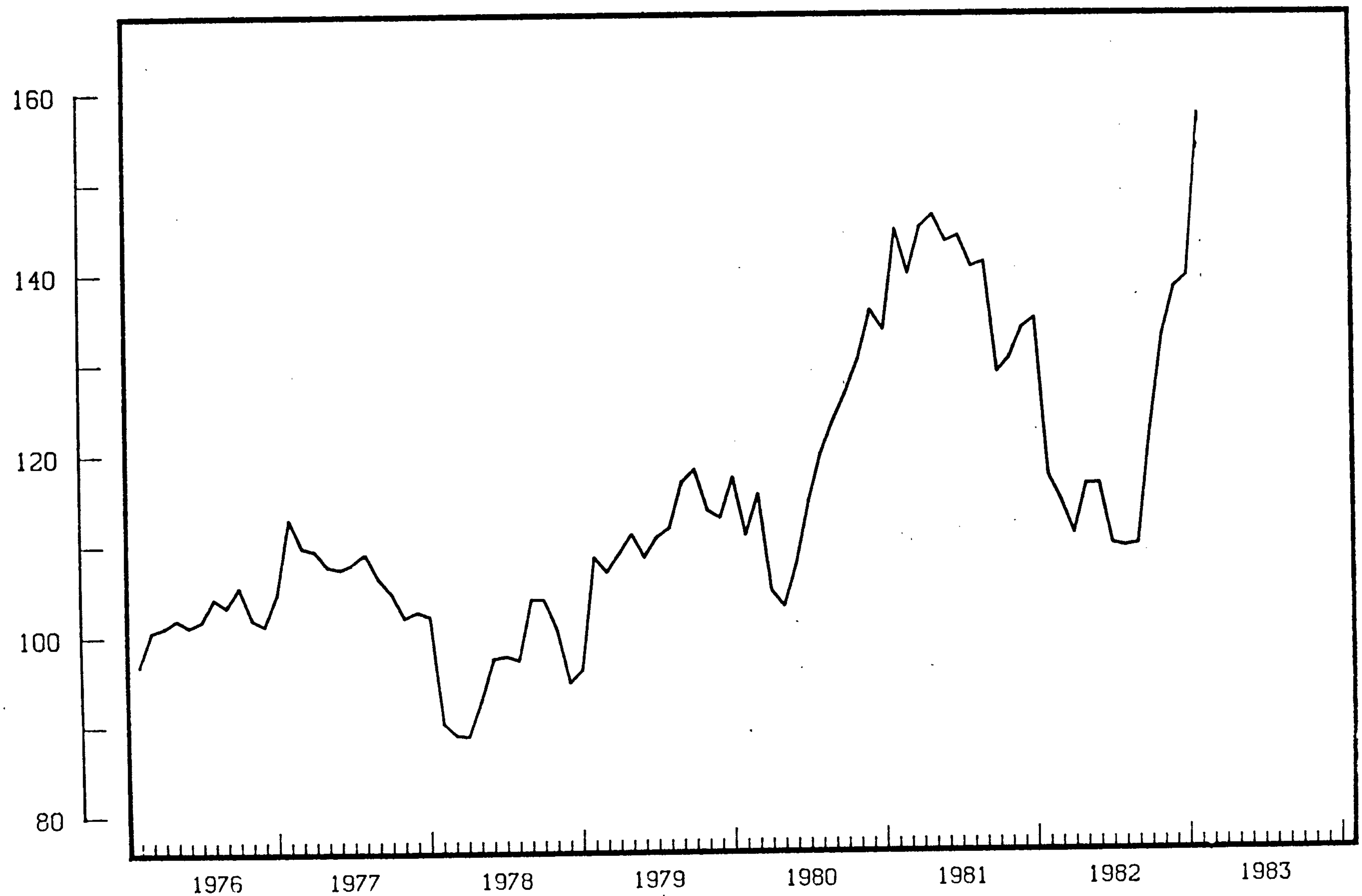


CHART 19

INDEX OF PRIVATE HOUSING STARTS (1967 = 100)

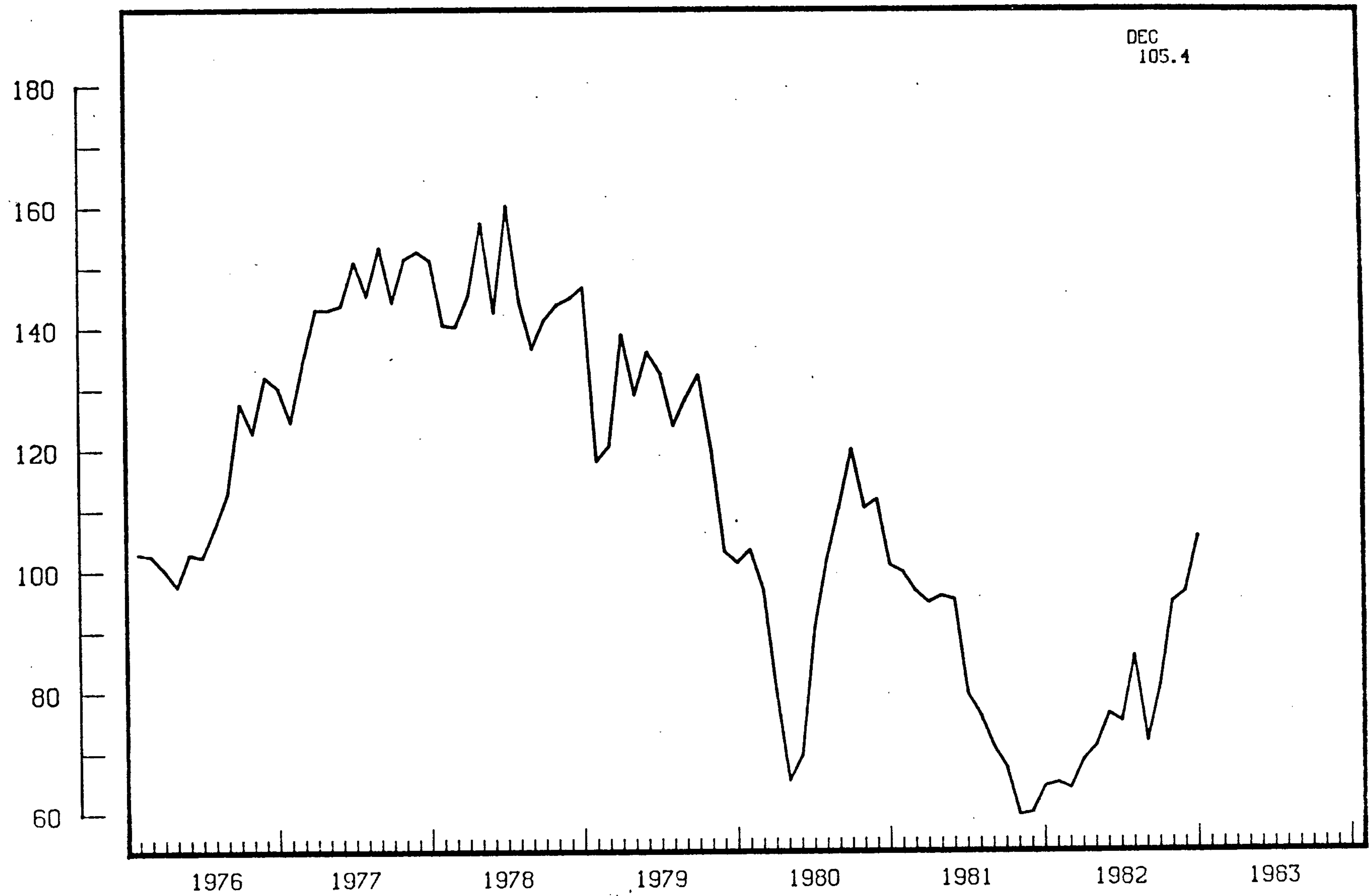
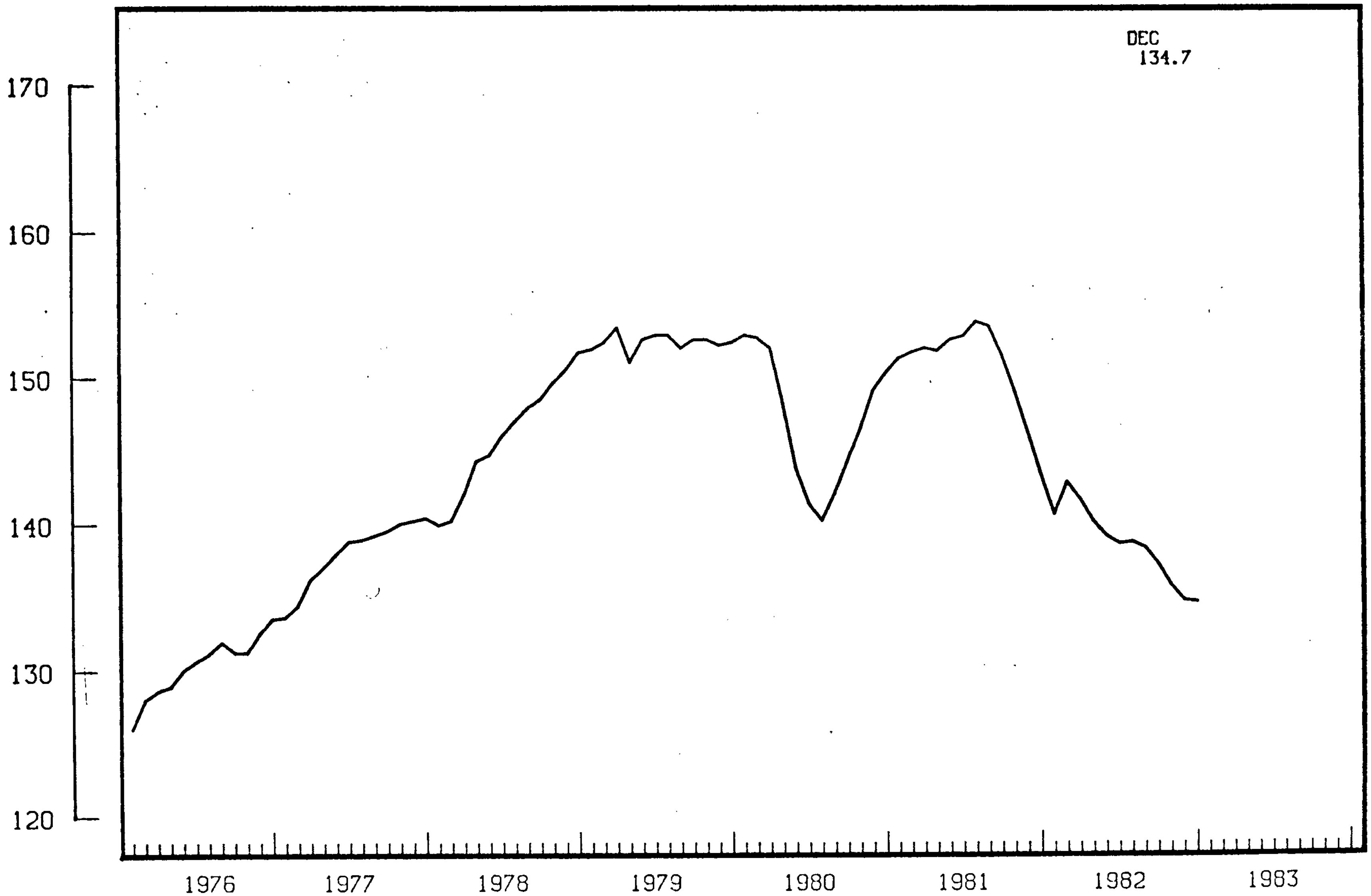


CHART 20

INDEX OF INDUSTRIAL PRODUCTION (1967 = 100)



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Working Paper

MPPRG 87-31

THE ARMY RESERVE COMPENSATION SYSTEM:

AN OVERVIEW

CHARLES DALE

JUNE 1987

FOR INTERNAL ARI DISTRIBUTION ONLY

REVIEWED BY:

APPROVED BY:

U.S. Army Research Institute
for the Behavioral and Social Sciences
5001 Eisenhower Avenue, Alexandria VA 22333

PB 8803

I. INTRODUCTION

The President and the U.S. Congress periodically order a study of a broad range of military compensation issues. In 1986 the Sixth Quadrennial Review of Military Compensation (QRMC) will place special emphasis on the increasingly important role of the military reserves. This paper has been written in anticipation of the needs of the Sixth QRMC. We describe here the history of the most important components of Army reserve compensation, and outline several important policy issues that affect the structure of the reserve compensation system.

Despite the growing importance of the reserves in the Total Army (Enns, 1985), there has been surprisingly little empirical research ont he determinants of reserve enlistments, reenlistments, and attrition rates. Grissmer, Doering, and Sachar (1982) concluded that membership in the reserves should be tested against the economic theory of moonlighting, wherein the extra income from reserve membership would be a significant determinant of enlistment and reenlistment rates. They also proposed an alternative to the moonlighting hypothesis in which they hypothesized that since reserve pay is such a small part of most reservists disposable income, reservists are more likely to behave like members of a voluntary association, in which a desire to serve is more important than the income earned. They used results of the 1978 Reserve Reenlistment bonus test to show that bonuses had little effect on reenlistment rates, although they did affect the length of commitment. Dale (1986) also analyzed the 1978 Reserve Reenlistment bonus data, and concluded that reenlistment bonuses could be used to increase the number of committed man-years of service, and that six-year bonuses were more cost-effective than three-year bonuses for that purpose.

An adequate data base is important for any type of analysis of the reserve compensation system. We describe the key components of reserve compensation in the next section.

II. COMPONENTS OF RESERVE COMPENSATION

The modern Army Reserve was founded in 1908, although its predecessors are as old as the United States. Financing the reserves is not a new problem facing policymakers.

A comprehensive history of the Army Reserves was not written until 1983 (Crossland and Currie, 1983). They note that the Militia Act of 1792 required each man to furnish his weapon and ammunition, thereby beginning a "tradition of underfunding Reserve Components." For the first 40 years of its existence, the modern Army Reserves didn't even pay soldiers for inactive duty drills and training (Table 1). Similarly, enlistment and reenlistment bonuses are a relatively new development, which were instituted largely as a result of severe manpower shortages that developed in the 1970's (see Tables 2 thru 5).

Before 1985, educational benefits for the reserves largely paralleled those in the active Army (see Sharff and Gordon, 1986; National Guard Almanac, 1986; Reserve Forces Almanac, 1986; Talbot and Ogloblin, 1982). The reserves do have a different way to compute retirement benefits, since they draw full benefits at age 60 (Retired Military Almanac, 1986).

III. POLICY ISSUES

Any analysis of the appropriate structure of reserve compensation should begin with a philosophy of compensation. Many of the issues are the same as those that arise in studies of compensation of the active forces (see U.S. General Accounting Office, 1986, and Dale, 1987, for surveys). For example, should policymakers construct a structure of compensation based on a "market" (i.e., purely economic) framework, or should they base compensation on an "institutional" (i.e., nonmonetary) framework? Within those frameworks should policymakers use a "comparability" approach, which attempts roughly to equate military and private sector earnings, or a "competitive" approach, which includes consideration of supply and demand?

There is clearly no one correct approach to military compensation -- policymakers might choose one type of approach for enlistments and another type of approach for reenlistments, because of different problems that may arise in each area. Once the approach has been chosen, the types of analysis needed becomes much more straightforward.

There are some behavioral studies that would be beneficial, regardless of the way in which compensation is approached. For example, do reservists behave like moonlighters or do they behave like members of voluntary associations, as suggested by Grissmer, et al. (1982)? Other questions concern the way in which reserve pay should be financed (Department of Defense, 1978). Should states pay for part of the costs of the National Guard in peacetime, when the state governor controls them? Should reservists' pay be linked with active Army pay, in spite of the fact that the markets for recruits are so different?

Another issue is reserve educational benefits. The new GI Bill which began on July 1, 1985, provides a substantial improvement over the previous program (Bemis and Gibbs, 1987). The new GI Bill is open to all officers and enlisteds who are high school graduates, while the old program was only available to high mental category enlisteds (Table 6). The new GI Bill has had a dramatic impact on the number of high quality recruits entering the Reserves (Table 7). The new GI Bill results in more high test score category (TSC) recruits, and longer enlistment terms.

Other issues include the question of whether there should be some type of national standard for the way in which employers treat reservists. At present, some employers will give full pay to soldiers in addition to their reserve pay. Other employers will only make up the difference between reserve pay and civilian pay, and still other employers will not pay reservists anything while they are in training, so some soldiers lose money.

Other behavioral issues include the question of what the appropriate mix should be of bonuses and educational incentives? Should the retirement system be made more attractive to aid retention? Finally, should there be a two-tiered pay system wherein members of Army Reserve roundout units, that face early deployment, would be paid more than other reservists?

The Sixth QRMC faces a number of important research questions like these. How those issues are addressed and resolved may have a significant impact on Army readiness in the future.

TABLE 1

ARMY RESERVES INACTIVE DUTY DRILL PAY

YEAR	ARMY RESERVE	NATIONAL GUARD
1908 - 1915	NONE	NONE
1916 - 1919	NONE	OFFICERS: UP TO $500/YR ENLISTEDS: UP TO 25% ACTIVE ANNUAL BASE PAY
1920 - 1947	NONE	1/30 BASE PAY FOR EACH DRILL
1948 - 1986	SAME AS NATIONAL GUARD	1/30 BASE PAY FOR EACH DRILL, UP TO TWO DRILLS PER DAY

TABLE 2

ARMY SELECTED RESERVE ENLISTMENT BONUSES

YEAR	MAXIMUM AMOUNT
1980 - 1986	$2,000

TABLE 3

ARMY INDIVIDUAL READY RESERVE ENLISTMENT BONUSES

YEAR	MAXIMUM AMOUNT
1981	$ 600
1982 - 1983	NONE
1985	$1,000

TABLE 4

ARMY SELECTED RESERVE REENLISTMENT BONUSES

YEAR	MAXIMUM AMOUNT
1978 - 1985	$1,800

TABLE 5

ARMY INDIVIDUAL READY RESERVE REENLISTMENT BONUSES

YEAR	MAXIMUM AMOUNT
1981	$600
1982 - 1983	NONE
1984 - 1985	$900

TABLE 6

EDUCATIONAL BENEFITS FOR SELECTED RESERVES

	OLD EDUCATIONAL ASSISTANCE PROGRAM	NEW GI BILL
ELIGIBLES	Enlisteds, NPS, High School Graduates, TSC I-IIIA	Enlisteds and Officers, High School Graduates, All Test Categories
BENEFIT TYPE	Incentives	Entitlement
OBLIGATION	6 Years Selected Reserve	6 Years Selected Reserve
BENEFIT	\$1,000/YR \$4,000 Total	\$2,520 at \$70/MO 1/2 Time \$3,780 at \$105/MO 3/4 Time \$5,040 at \$140/MO Full Time
HOW PAID	Reimbusement of School Expenses Paid Quarterly	Cash Paid Each Benefit Month

Source: Bemis and Gibbs (1987)

TABLE 7

THE NEW GI BILL AIDED THE RESERVE RECRUITING EFFORT

	LAST 12 MONTHS VEAP	FIRST 12 MONTHS NEW GI BILL	PERCENT CHANGE
HIGHER QUALITY RECRUITS:			
USAR TSC I-IIIA RECRUITS	45%	56%	+24%
USAR HS GRAD RECRUITS	79%	86%	+ 9%
ARNG HS GRAD RECRUITS	71%	85%	+13%
LONGER ENLISTMENTS:			
USAR 6-YR ENLISTMENTS	68%	87%	28%

Source: Department of the Army, Office of the Deputy Chief of Staff for Personnel.

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PB88D

Working Paper

MPPRG 87-32

THE SOCIAL BENEFITS OF ARMY EDUCATIONAL BENEFIT PROGRAMS

CHARLES DALE

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Reviewed By: Abraham Nelson

Approved By: E. Johnson

U.S. Army Research Institute
for the Behavioral and Social Sciences
5001 Eisenhower Avenue, Alexandria VA 22333

PB88D

I. INTRODUCTION

The New GI Bill and Army College Fund (ACF) began on July 1, 1985. Since then there has been considerable discussion of the cost-effectiveness of Army educational benefits. This note focuses on the relative income of military and civilian families, and on the relative participation rates of educational benefits by minority groups. In particular, Hispanics have higher ACF participation rates than either whites or blacks.

II. DISCUSSION

Relative income levels of military and civilian families were examined by an analysis of data from the National Longitudinal Survey. Table 1 shows that, except for 1982, there is not a statistically significant difference in family incomes between soldiers and civilians in the same cohort. The table shows that average income levels for soldiers' families were consistently lower, but the sample sizes were not large enough to attribute this to anything except chance. A similar result was obtained for Hispanic families, as shown in Table 2. Hispanic soldiers and civilians came from families with approximately equal incomes, although again the sample sizes were small. This type of information would be useful in future, more detailed studies of military and civilian families, since it shows that controlling by race may be sufficient to also control for income differentials.

In terms of educational benefits, the current ACF program was proceeded in FY81 and FY82 by the Ultra Veap program, which was itself part of the Educational Assistance Test Program. Table 3 shows the participation rates for eligible, i.e., high school graduates, test category I-IIIA, in selected MOS's, who chose to participate in the program. Blacks and whites chose to participate at about the same rate, while Hispanics enrolled in the program at a higher rate. It is too early to tell whether or not Hispanics will eventually use their earned benefits at higher or lower rates than blacks or whites. Early usage data has not been clear. For example, Tannen and Young (1985) concluded that blacks have had the lowest benefit usage rates. Those conclusions contradict earlier evidence of Manski and Wise (1983) who concluded that, when all relevant variables are controlled for, blacks have the highest usage rates of all.

III. CONCLUSIONS

Data from the National Longitudinal Survey did not show a significant difference in incomes between military and civilian families. In addition eligible whites and blacks enrolled in the Army College Fund (ACF) program at about the same rates. Hispanics, however, enrolled in the ACF program at higher rates than either whites or blacks. It will take more experience with the ACF program to determine if the higher initial participation rates for Hispanics will also mean higher benefit usage rates when they leave the Army.

TABLE 1

MILITARY AND CIVILIAN FAMILY INCOME COMPARISONS

ALL FAMILIES

	NUMBER	MEAN FAMILY INCOME	STANDARD DEVIATION
		1979	
Civilians	7406	$17,272	$13,206
Soldiers	157	16,107	10,732
F = 1.51*,	t (unequal variances) = 1.34		
		1980	
Civilians	6393	$20,651	$15,010
Soldiers	127	19,470	12,718
F = 1.39*,	t (unequal variances) = 1.03		
		1981	
Civilians	5517	$22,964	$16,345
Soldiers	139	21,210	14,066
F = 1.35*,	t (unequal variances) = 1.45		
		1982	
Civilians	4682	$25,639	$18,119
Soldiers	123	21,072	14,658
F = 1.53*,	t (unequal variances) = 3.38**		
		1983	
Civilians	3454	$25,950	$17,903
Soldiers	64	24,686	14,945
F = 1.44,	t (equal variances) = .56		

* = Variances are unequal at .05 level of significance.
** = Soldiers/Civilians family incomes are unequal at .05 level of significance.

Data Source: National Longitudinal Survey.

TABLE 2

MILITARY AND CIVILIAN FAMILY INCOME COMPARISONS

HISPANICS

	NUMBER	MEAN FAMILY INCOME	STANDARD DEVIATION
		1979	
Civilians	1083	$13,148	$10,566
Soldiers	19	12,955	9,137
F = 1.34,	t (equal variances) = .08		
		1980	
Civilians	901	$16,464	$12,946
Soldiers	14	15,923	10,078
F = 1.65,	t (equal variances) = .16		
		1981	
Civilians	767	$19,066	$14,094
Soldiers	16	18,940	12,401
F = 1.29,	t (equal variances) = .03		
		1982	
Civilians	656	$21,653	$16,082
Soldiers	12	19,744	12,786
F = 1.28,	t (equal variances) = 1.69		
		1983	
Civilians	497	$22,375	$16,817
Soldiers	7	24,929	19,018
F = 1.28,	t (equal variances) = .40		

* = Variances are unequal at .05 level of significance.

Soldiers and Civilians family incomes are all equal at .05 level of significance.

Data Source: National Longitudinal Survey

TABLE 3

PARTICIPATION RATES IN THE ULTRA VEAP PROGRAM

PERCENT OF ELIGIBLE USERS

	FY81	FY82
WHITES	67.4%	72.2%
BLACKS	67.2%	71.1%
HISPANICS	75.4%	78.0%

Data Sources: Veterans' Administration, Defense Manpower Data Center, U.S. Army Finance and Accounting Center.

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Manpower and Personnel Policy Research Group

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ARMY FORCE STRUCTURE POLICY PLANNING ISSUES

CHARLES DALE

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Approved by:

Curtis L. Gilroy
Chief, Manpower and Personnel
Policy Research Group

MANPOWER AND PERSONNEL RESEARCH LABORATORY

U.S. ARMY RESEARCH INSTITUTE
FOR THE BEHAVIORAL AND SOCIAL SCIENCES
5001 Eisenhower Avenue, Alexandria, VA 22333-5600

ARMY FORCE STRUCTURE POLICY PLANNING ISSUES

INTRODUCTION

The Army faces a number of important and recurring personnel issues:

- o Who to recruit
- o What tools should be used to recruit and retain soldiers
- o How much to pay for enlistment and reenlistment bonuses
- o Who to promote or terminate

The Army recruited over over 133,000 soldiers into the active Army and over 162,000 into the Reserve and National Guard in fiscal year 1987, and spent over $23 billion in personnel funds in FY87, so how the Army allocates its personnel resources has a significant impact on the combat readiness and capability and security of the country.

Army decisionmakers would find a total force model extremely useful for developing consistent and logical manpower policies. This paper surveys several existing military manpower models and describes the issues they are intended to address. There are numerous excellent existing models that may be used for <u>operational</u> planning, but there is not an existing total force model that is dedicated to <u>policy analysis</u>. We conclude that there are several areas where the state-of-the-art of computer modeling now enables model builders to construct and apply total force planning models to answer sophisticated policy questions about active and reserve forces that are likely to become increasingly important in the future.

A total force model could also better address the quality issue. What is the best way to recruit and retain high quality soldiers? What is the cost of those policies? To what extent is experience a good substitute for quality? What are the tradeoffs between the increased costs of recruiting and retaining high quality soldiers?

MANPOWER PLANNING BACKGROUND

Manpower planning models are essential management tools in large, complex organizations like the Army. Such models match the supply of people to the available jobs at the right time, within organizational and economic constraints. Manpower planning models can be applied in a variety of ways by an organization. For example, they can be used to support decisionmaking and policymaking or be used in the day-to-day operation of the personnel and manpower systems of an organization. Such models are necessary to see that:

- Manpower requirements are met
- Budgets are not exceeded
- People are used productively
- Policies are consistent
- Promotion needs are met
- Reenlistment standards are set properly

Manpower planning models can be classified as either descriptive (e.g., "Markov") or prescriptive (e.g., "optimization"), or both (e.g., "optimization with an embedded Markov model"). Descriptive models may be used to estimate the consequences of different policies, while prescriptive models may be used to choose the least costly policies. For example, an optimization model might be used to determine the least costly option among a set of alternative reenlistment bonus policies, while a Markov model would show the long-term consequences of the policies.

A descriptive Markov model is a basic analytical tool used in manpower planning, in which the state of the organization after a certain time period, given an initial stock of personnel, can be determined. In a Markov model a matrix of transition rates is used to project the future state of a system given some initial state. In a manpower planning situation the states could represent occupations and the transition rates could represent the probability that an individual moves from one occupation to another. The most widely known applications of Markov models are due to Bartholomew (1967). Use of a Markov model implies certain assumptions. The primary one is that the probability that someone moves from one state, e.g. occupation, to another at a specific time is independent of how the state was reached. In some manpower planning situations this assumption may not be appropriate. For example, the behavior of a soldier at the first tour reenlistment point may depend upon whether he or she received the Army College Fund. There are many instances, however, where Markov models have been successfully employed in manpower planning.

Assumptions of population homogeneity and stationary transition rates are also implied when a Markov model is used. Population homogeneity means that populations have been or can be identified within which individual transition behavior is the same. The stationary transition rate assumption implies that the transition rates are time independent.

The class of prescriptive models may be used to determine organizational policies. Models in this class can be used to determine the number of individuals an organization should recruit or retain. For prescriptive models goals and criteria are identified and specified in terms of an objective function. Normally this function is to be optimized subject to organizational, behavioral, and transition constraints. A model with this format is called a mathematical programming model. If the objective function is linear, meaning changes in the decision variables result in proportional changes in the quantity being optimized, then it is a linear programming model. This type of formulation is amenable to solution using efficient linear programming algorithms. Using computers it is feasible to solve very large linear programming problems. If the objective function is nonlinear, meaning changes in the decision variables lead to nonproportional changes in the quantity being optimized, then the solution algorithms are not as efficient as those for linear programming problems and the computer resources required, both core and time, are greater. Conversely, the size of the problem that can be solved within given computer resources is much smaller.

Mathematical programming models in manpower planning optimize an objective such as cost while satisfying manpower constraints. Charnes, Cooper, and Niehaus (1968) embedded Markov models into a mathematical programming formulation to derive the benefits of both methods. Thus there are a wide variety of mathematical techniques available for force structure planning, and the choice of which one to use depends upon the particular decisionmaking problem.

In both Markov models and mathematical programming models with embedded Markov processes it is necessary to estimate transition rates for populations of individuals. A central issue in the estimation process is how to disaggregate the population. If the population is disaggregated into very small cells, such as a breakdown by grade and years of service and MOS for a pay or bonus model, then the size of the problem becomes large and difficult to solve. On the other hand if the Markov population homogeneity assumption is to be satisfied the population must be disaggregated to a level such that individual behavior within the cells is the same. In most applications a compromise is reached between satisfying the homogeneity assumption and reducing problem size.

ARMY INVENTORY MANAGEMENT

Markov models are the appropriate technique for solving many Army enlisted personnel management problems. Since the Army doesn't have lateral entry, and personnel are therefore promoted from within, the Army force structure may be described by a matrix of transition probabilities between ranks. Several Markov models have been developed to analyze inventory management problems.

One example of an Army personnel planning model that combines a Markov descriptive model with a prescriptive optimization model is the Army's FORECAST system. Two of its major components are the Enlisted Loss Inventory Model - Computation of Manpower Programs Using Linear Programming (ELIM-COMPLIP), described in Holz and Wroth (1980), and the Military Occupational Specialty Level System (MOSLS), described in Eiger, Jacobs, Chung, & Selsor (1988). The FORECAST system is a typical example of an operational planning model, because it has as its primary decision variables numbers of people, i.e., numbers of accessions, numbers of separations, etc. Budgets are usually entered as constraints. In contrast, a dedicated policy analysis model might have monetary incentives such as enlistment bonuses and selective reenlistment bonuses as decision variables.

The FORECAST system is well suited to its role as an operational planning model, and it can also be used for some types of policy analyses. Since a complete MOS-level model would exceed the size limitations of commercially available solution codes, the MOSLS model was decomposed into the Army's 30 Career Management Fields (CMFs). The CMF groupings were then solved independently to derive monthly authorizations for the active Army for individual MOSs. The MOSLS and ELIM-COMPLIP models have recently been combined into the larger Army FORECAST system. The FORECAST system does lack some important attributes for a model to be used for general incentive management: a set of internally computed transition rates, a method of applying proposed economic incentives that would affect those transition rates at the MOS level, and the inclusion of economic incentives as decision variables rather than constraints.

In particular the ELIM-COMPLIP model provides forecasts of Army strength, gains, and losses over a seven year period based on historical time series data, the projected effects of policy changes and other user-specified constraints. A typical objective function is to minimize the deviation of projected trained Army strength from the target strength. Constraints might include bonuses and reenlistment standards. The principal output is a report called the Active Army Military Manpower Program, containing monthly forecasts of a variety of categories of strength, gains and losses, as well as requirements for initial training, for the current and six future fiscal years.

Inputs to ELIM-COMPLIP consist of both automated files, such as accounting records, and user supplied inputs such as policy constraints like mandated Congressional ceilings on end strength. The model rate generator projects loss rates partitioned by 10 loss categories and approximately 4000 population categories, some of which can be defined by the user. ELIM-COMPLIP enables Army managers to pretest policy decisions and to foresee the impacts on the active Army of changing reenlistment eligibility policies, policies relating to separation of marginal performers early in their training, and policies relating to the development of alternative manning plans for mobilization.

The Military Occupational Specialty Level System (MOSLS) combines a Markov personnel flow model with a linear optimization model to support decisionmaking in the areas of recruitment, training and education, promotion, reclassification, separation, and retirement. Prior to the implementation of MOSLS, separate officers in the Army could make independent judgments in one area without evaluating their possible effects in other areas. For example, a shortage MOS might lead a promotion manager to ease promotion restrictions at the same time a reclassification manager might change rules to facilitate retraining in the skills in the shortage MOS. The lack of coordination might lead to overcompensation and a glut of new personnel in the formerly shortage MOS, a new shortage of personnel in grades from which soldiers were rapidly promoted, and a misallocation of retraining resources. The MOSIS model thus focuses not on cash incentives such as bonuses, but on qualitative policy decisions such as recommendations for enlisted promotions, reenlistments, reclassifications, and skill training, affecting individual MOS's. There is therefore still a need for a total force model dedicated to policy analysis rather than operational management.

A long range Army Personnel Planning System (APPS) has been developed as a complement to the FORECAST system (see Miller, Bonder, Graulich, & Zabinsky, 1983). It consists of a Markov model describing the flow of personnel through the Army manning system for a given set of input transition rates, and an optimization model that determines transition rates that would lead to user-specified objectives for the manning system. The APPS model focuses on many of the same objectives and decision variables as the FORECAST system, such as minimizing costs, determining potential shortage areas, considering the economic outlook, and determining transition rates. The APPS model also primarily has operational, rather than economic decision variables. It focuses on numbers of accessions, numbers of migrations, and numbers of separations. The major difference between APPS and FORECAST is the 10-year horizon of APPS ("strategic planning") versus the 0 to 7-year horizon of FORECAST ("operational planning" and "management planning"). While the goals and methods of APPS and FORECAST are similar, there are differences in their implementation. For example, a key part of both models is transition rates, which are more difficult to predict ten years in the future than they are near term. On the other hand, in some instances long-term economic forecasts can actually be easier to make than short-term forecasts since the forecaster can ignore highly unpredictable short-term business cycles and simply extrapolate the long-run trend of the economy. APPS and FORECAST are clearly interrelated, and in the future APPS may be used to set mid and long range end strength targets as guidance for the FORECAST system.

The Fifth Quadrennial Review of Military Compensation (QRMC, 1984) provides an example of a simple Markov model that was used for policy research rather than for operational planning. The QRMC projected the cost of the military retirement system under various assumptions about attrition rates. They also performed econometric analyses of how continuation behavior would change in response to changes in retirement policy, and combined that with a Markov model to project the numbers staying until retirement, the costs of the retirement program, and force composition. Few changes were made to the military compensation system as a result of their report.

A team of analysts at West Point (see Moreno, Fagan, and Naas, 1984) has been developing manpower cost optimization models. In particular, they have a "grow the force" model for enlisted soldiers, showing the short term effects of variables such as pay caps on the structure and cost of the enlisted force. They have also been developing a life cycle cost model, which will allow choice of a desired long term force structure and determine the best combination of pay and promotion policies which will achieve that steady state. They have recently begun incorporating the reserves into their models.

The two-year enlistment option provides an example of how a total force model could be used to examine policy options. The two-year option was criticized for being a very expensive way to attract high quality recruits, who found it very attractive to leave the Army as soon as possible to use their accumulated educational benefits. Polich (1987) examined the two-year recruiting option and concluded that although under some sets of assumptions the two-year program might cost somewhat more than alternatives for the active forces, the costs can be substantially offset by savings for recruiting and training in the reserve components. Since the reserves are becoming an increasingly important part of the total Army, a total force model could be especially useful for this type of policy analysis in the future.

Other reserve issues that differ from active Army issues include those that arise from the differences in ratios between prior service (PS) and nonprior service (NPS) enlistees. While the active Army has mostly nonprior service recruits, the reserves have about half prior service enlistees (Department of Defense, 1987). NPS and PS recruits tend to have different attrition patterns and training costs (usually lower for PS recruits) that could be taken into account in a total force model.

Finally, a total force model could incorporate the geographic constraints involved in recruiting reservists, and it could also examine movements between components such as active to reserve transfers in which soldiers remain in the same MOS. Geographic constraints could be incorporated by imputing the costs of recruiting in different areas that arise because most reservists like to live near their bases, and that makes it much harder to recruit from thinly populated areas. Active Army to reserve transfers could be incorporated by making allowances for lower training costs if soldiers remain in the same MOS.

For a total force model to be usable for any of the above policy issues it would need at least four parts: quantifiable objectives, a set of baseline transition rates, a method of incorporating the effects of alternate policies on those rates, and a planning model that shows the results of alternate policies on the total force.

INCENTIVE MANAGEMENT POLICIES

Defending pay and incentive policies is a constant task for the Army, especially in the light of Congressional budget constraints. Congress, in the FY88 DoD Appropriations Act asked the Army for a report by 1 Jul 88 discussing Army compensation issues. There are a number of interrelated policy questions: Should the Army continue to be permitted to offer two-year enlistment options? Is it contradictory to entice high quality soldiers with educational benefits that make it very attractive to leave? What is the relative cost-effectiveness of incentives such as the Army College Fund, enlistment bonuses, and selective reenlistment bonuses?

In FY81 the Department of Defense conducted an experiment on educational benefits. That experiment, the Educational Assistance Test

Program of 1981, was successful in showing that the Army could increase its enlistments of high quality soldiers without resulting in lower enlistments by the Air Force or Navy. One of the test programs, Ultra VEAP, was implemented in FY82 as the Army College Fund (ACF).

The Army conducted an Enlistment Bonus Experiment from July 1982 through June 1984 (see Polich, Dertouzos, and Press 1986). They had three test cells: 70% of the nation (the control program) offered $5000 bonuses for four-year enlistments, 15% of the nation got $8000 for four-year enlistments, and 15% of the nation got $8000 bonuses for four-year enlistments or $4000 bonuses for three-year enlistments. Rand concluded that bonuses expanded the recruiting market and increased the average term of commitment, and channeled high quality recruits into high priority MOSs.

There are numerous existing models that analyze particular aspects of incentive management. Munch (1976) built a model for optimizing the management of enlistment and reenlistment bonuses, but she used her preliminary model only to produce computer simulations. Grissmer and Fernandez (1986) built a theoretical nonlinear programming model for minimizing the cost of meeting manpower requirements, but they had not yet collected enough data to obtain numerical results from their model. Morey and Lovell (1987) did an exploratory analysis of monetary and nonmonetary incentives for Army recruiting, but there is no operational system for implementing their results. None of these models have the combination of an MOS level of disaggregation and a method for showing the effects of monetary incentives on transition rates that are necessary for an Army total force incentive management model.

Models and experiments such as those described above are therefore helpful for implementing parts of the Army's incentive management policies. They demonstrate the potential for using manpower planning methodologies for developing policy models to improve incentive management, and for providing information on the tradeoffs of alternative program levels and combinations in selected areas, e.g., comparing general bonuses with selective reenlistment bonuses.

DISCUSSION

There does not yet exist a total force policy analysis model that would produce the rapid results and responses to many of the "what if" questions that frequently come from Congress and elsewhere. Two questions of particular importance that frequently arise are:

(1) How should the Army manage its budget operationally?

(2) How big a budget does the Army need to meet its quality goals?

As noted in the last section, there are a number of operational models that have been developed to answer the first question for the active Army, and some of them are currently adding the reserves so that they will ultimately become total force models. Those models typically have as objectives minimizing the deviations of projected Army strength from targets, and they have economic incentives such as bonuses included as constraints. There is currently no total force model to answer the second question, however, and that is a very promising area for research.

An total force incentive management policy model would consist of a list of goals, a set of constraints, and a set of decision variables. Goals might include a certain percentage of high quality accessions in selected MOSs, a desired number of committed first term and second term man-years of service in the active Army, a desired level of prior service accessions in the reserves, a minimum level of Skill Qualification Test (SQT) scores, etc. Constraints would include first term and second term manpower levels, linked by a set of transition rates. Decision variables might include the sizes of enlistment and reenlistment bonuses. The model would then be solved to achieve the desired goals at minimum cost. The model would involve multiple years because, for example, a certain level of reenlistment bonuses might ultimately be necessary to retain high quality soldiers, but that in turn would depend greatly upon who initially enlisted.

CONCLUSIONS

A number of excellent operational models already exist to analyze particular aspects of individual Army policy issues, but there are as yet no total force policy models for inventory management, no cost-effectiveness models for quality issues, and no general incentive management models that could be used for responding quickly to Congressional inquiries. The existing operational models typically have as objective functions the minimization of projected strength from targets, and they include economic incentives as constraints. Transition rates are frequently drawn from other models. A total force incentive management policy model would, on the other hand, have economic incentives as decision variables, and transition rates could be developed as part of the research creating the model. Such a model could address explicitly questions about the relative tradeoffs of various types of economic incentives, such as payment of general reenlistment bonuses versus selective reenlistment bonuses. An Army total force incentive management policy model would result in more efficient incentive management, provide a better, more cohesive justification for the Army's incentive program, and lead to superior, less turbulent manpower policies.

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Manpower and Personnel Policy Research Group

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ARMY FY89 GSMA CONTRACT PROJECTIONS

CHARLES DALE

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Reviewed by:

David K. Horne
Acting Leader, Manpower and Personnel Planning Team

Approved by:

Curtis L. Gilroy
Chief, Manpower and Personnel Policy Research Group

MANPOWER AND PERSONNEL RESEARCH LABORATORY

U.S. ARMY RESEARCH INSTITUTE
FOR THE BEHAVIORAL AND SOCIAL SCIENCES
5001 Eisenhower Avenue, Alexandria, VA 22333-5600

PA 9285

ARMY FY1989 GSMA FORECASTS: APR UPDATE

The number of FY 89 GSMA contracts reported by USAREC to date is 11,996 for the first quarter and 12,398 for the second quarter, for a total of 24,394 for the first half of the fiscal year. These results are well below the 26,851 contracts for the comparable period of FY88 and the 30,411 contracts achieved in FY87, as shown in Table 1.

TABLE 1
GSMA CONTRACTS
A Strong Economy Has Made Recruiting Increasingly Difficult

	FY87	FY88	FY89
Q1	15,044	12,949	11,996
Q2	15,367	13,902	12,398
Q3	12,355	11,010	
Q4	13,284	11,163	
TOTAL	56,050	49,024	

A dramatic drop in youth unemployment to 12.0% in Mar 89, for a quarterly average of 13.9%, has caused us to revise our earlier forecasts downward. Lower unemployment rates will continue to make recruiting difficult. We project a 13.0% quarterly average unemployment rate through FY90.

Table 2 provides revised forecasts for FY89 and FY90. We predicted a total of 24,911 contracts for the first half of FY89, for a six month forecast error of +2.1%.

TABLE 2
GSMA Contract Forecasts

		Forecast	Actual	Error
FY89	Q1	11,792	11,996	-1.7%
	Q2	13,119	12,398	+5.8%
	Q3	10,903		
	Q4	12,098		
	TOTAL	47,912		
FY90	Q1	12,061		
	Q2	13,031		
	Q3	10,984		
	Q4	12,377		
	TOTAL	48,453		

We have assumed that the proposed 4% military pay raise for Jan 90 will be comparable with private sector increases. There may be upward pressure on civilian wages in coming months, causing an unfavorable trend in the military/civilian pay ratio. Thus, barring a recession, any further revisions in our GSMA forecasts are likely to be further downward.

Manpower and Personnel Policy Research Group

Working Paper MPPRG 89-01

ARMY FY 1989 GSMA FORECASTS
JANUARY UPDATE

CHARLES DALE

JANUARY 1989

Reviewed by:

David K. Horne
Acting Leader, Manpower and Personnel Planning Team

Approved by:

Curtis L. Gilroy
Chief, Manpower and Personnel Policy Research Group

MANPOWER AND PERSONNEL RESEARCH LABORATORY

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES
5001 Eisenhower Avenue, Alexandria, VA 22333-5600

ARMY FY1989 GSMA FORECASTS: JAN UPDATE

The economy has continued to show surprising strength, with the youth (16-21) unemployment rate falling to 13.4% in first quarter of FY1989, as shown in Table 1 below. Historically, increased civilian job opportunities have made Army recruiting more difficult. The drop in the youth unemployment rate could have a significant negative impact on the recruiting market.

TABLE 1
Youth (16-21) Unemployment Rate

FY88 Q1	14.7%
FY88 Q2	14.4
FY88 Q3	13.7
FY88 Q4	13.8
FY89 Q1	13.4

The January 1989 predictions of the ARI GSMA Forecasting Model reflect the continued strength of the economy. We project youth unemployment to increase gradually to 14% by December 1989, and to 14.3% by the end of 1990. There is uncertainty in the economic outlook. Econometric models typically perform best when the economy is moving along a steady trend, as it has in recent months, and they do worst at turning points. Thus, the onset of a recession could affect enlistments dramatically.

The actual number of net GSMA contracts in the first quarter of FY89 was 11,996. The model predicted 11,792, for a prediction error of -1.7%. The January forecast, as shown in Table 2, differs only slightly from the October forecast.

TABLE 2
GSMA Contract Forecasts: FY89 - FY90

FY89		FY90	
Q1	11,996*	Q1	12,668
Q2	13,119	Q2	13,743
Q3	11,254	Q3	11,561
Q4	12,806	Q4	12,983
	49,175		50,955

* Actual Net Contracts

Manpower and Personnel Policy Research Group

Working Paper MPPRG 89-08

The Effects of the New GI Bill and Higher Reenlistment Bonuses on Army Reserve Reenlistments

CHARLES DALE
ALAN F. DRISKO

April 1989

Approved for Distribution to Sponsor or Proponent

Reviewed by:

David K. Horne
Acting Leader, Manpower and Personnel Planning Team

Approved by:

Timothy W. Elig
Acting Chief, Manpower and Personnel Policy Research Group

MANPOWER AND PERSONNEL RESEARCH LABORATORY

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES
5001 Eisenhower Avenue, Alexandria, VA 22333-5600

THE EFFECTS OF THE NEW GI BILL AND HIGHER REENLISTMENT BONUSES ON ARMY RESERVE REENLISTMENTS

The President's Sixth Quadrennial Review of Military Compensation (Sixth QRMC) has been studying reserve compensation issues. In this paper we examine the effects of the New GI Bill and higher reenlistment bonuses on reserve reenlistments. We conclude that the higher bonuses resulted in a net increase in reenlistment contracts and longer committed man-years of service for both the Army Reserve and Army National Guard. The New GI Bill increased the committed man-years of service for both the Guard and Reserve, and resulted in a large net increase in reenlistment contracts for the National Guard.

BACKGROUND

The mission of the reserves has been profoundly affected by economic considerations since the birth of the United States. Crossland and Currie (1984), in their study of the history of the reserves, note that the Militia Act of 1792 required each man to furnish his weapon and ammunition, thereby beginning a "tradition of underfunding Reserve Components." For the first 40 years of its existence, from 1908 to 1948, the modern USAR didn't even pay soldiers for inactive duty drills and training.

The reserves ended the 1960's with financial difficulties brought on by the Vietnam War. Partly as a cost-saving measure, Secretary of Defense Robert McNamara tried unsuccessfully to merge the Guard and Reserve.

The Total Force Policy was begun in 1970. The intent was to make the reserves a major partner in the Total Army. Preparation for an all-volunteer force was the precipitating event, but the policy actually developed in response to budgetary difficulties. Defense Secretary Melvin Laird noted in 1972 that USAR units could be maintained for less than half the cost of an active Army unit, so that greater reliance on reserves in the Total Army would aid President Nixon's goal of reducing the federal budget.

The paradox of the all-volunteer force was that the reserves took on increasing responsibilities, but the capability of filling ranks without a draft was diminished. The Volunteer Army concept was based partly on the assumption that if soldiers were paid wages comparable to what they could receive in the private sector, manpower needs could be met. Higher pay worked for the active Army, but did not maintain reserve strength in the late 1970's.

Higher pay by itself failed the reserve components because, until the Reserve Components Compensation Study was completed (DOD 1978), it was not well understood that motivation for joining the reserves was profoundly different from motivation for joining the active forces. Since the reserves offered little or nothing in the way of benefits such as medical care, travel, and paid vacations, soldiers tended to view reserve duty as a part-time, moonlighting job. Up until then, the Army had tried all sorts of approaches to solve reserve strength problems: increasing the size of the recruiter force; offering low-cost benefits (example: offering free burial flags to soldiers who died while in a Ready Reserve status); and asking Congress to extend the total military obligation to eight years. In August 1978 the Guard established a separate Full Time Recruiting Force, and the Reserve followed a year later. Reserve recruiting was also transferred from the Army Forces Command (FORSCOM) to the U.S. Army Recruiting Command (USAREC) between October 1978 and May 1979. Finally in 1978, for the first time in their history the reserves began offering enlistment bonuses. Two years later, after a test program, they began offering reenlistment bonuses and some educational assistance. The combination of all these programs helped to eliminate some reserve manpower shortages.

Enlistment bonuses varied by military occupational specialty up to a maximum of $2000. Half of the bonus was paid upon completion of initial active duty for training (IADT), one-fourth was paid at the end of the second year of service, and one-fourth was paid at the end of the fourth year of service. Payments made under the enlistment bonus program had to be deducted from payments made under the educational assistance program.

To be eligible for a reenlistment bonus, a reservist must have completed 9 years or less of total military service, and must agree to reenlist or extend his or her enlistment for 3 or 6 years in a particular military skill or unit. Initially the bonus was $900 for a 3-year reenlistment and $1800 for a 6-year reenlistment. Half of the bonus was paid upon reenlistment and the balance was paid in six equal annual installments. Faced with the possibility of a resumption of manpower shortages in the mid-1980's, reserve reenlistment bonuses were increased in July 1986 from $900 to $1250 for a 3-year reenlistment, and increased from $1800 to $2500 for a 6-year reenlistment.

The dramatic effect that reenlistment bonuses have on increasing the committed man-years of service may be seen in Table 1, which shows the results of the 1978 reenlistment bonus experiment. Without bonuses the vast majority of reservists who didn't separate reenlisted or extended only one year at a time. With reenlistment bonuses, which were, after all, only a few hundred dollars a year, very few soldiers reenlisted for only one year and instead reenlisted for 3-years or 6-years. This clearly shows how, regardless of soldiers' exact motivations for joining or staying in the reserves, economic incentives can be very effective in changing soldiers' lengths of commitment.

Longer terms of commitment have numerous benefits for the reserves (Grissmer et al. 1982), such as reduced costs for record keeping and retention counseling. In addition, decreasing the opportunity for reservists to separate before a mobilization may increase readiness. Finally, research has subsequently shown that reservists in the bonus test group had lower attrition rates than reservists in the control group (Dale 1987), as soldiers tended to honor their long-term commitments in spite of the marital and career changes that may have caused them to separate if they could have one year at a time. These benefits to the reserves of longer commitments are the reason that the Sixth QRMC was especially interested in the effects that the higher bonuses and new educational benefits have had on changing the relative proportions of 6-year and 3-year reenlistments.

Table 1

Reenlistment Bonuses Increased The Committed Man-Years of Service

1978 Reenlistment Bonus Test

Reenlistment Decision	USAR Groups Control	USAR Groups Bonus	National Guard Groups Control	National Guard Groups Bonus
6-Years	1%	29%	0%	21%
3-Years	10%	15%	2%	7%
1-Year	33%	5%	35%	8%
Separate	56%	50%	63%	64%

Source: Grissmer, Doering, and Sacher (1982)

Army educational benefits have been used for diverse purposes. The first GI Bill covered only active Army veterans who served between 1940 and 1947 and who could show that their education or training plans had been interrupted by compulsory military service. Veterans received up to $500 per year for tuition, fees, and books, and $50/month as a subsistence allowance to help ease the transition to civilian life. In 1945 the law was amended to pay benefits to all soldiers who served a specified minimum time on active duty.

The Korean War GI Bill began in 1952 and covered veterans who served on active duty between 1950 and 1955. Veterans received 1 1/2 months benefits for every month of active duty service, not to exceed 36 months of benefits. Veterans were required to begin using their benefits within three years after discharge and complete their use within eight years.

The post-Korean War and Vietnam-era GI Bill covered veterans who served between 1955 and 1976. It was similar to the previous GI Bill, with a subsistence allowance of $100/month and the entitlement period figured at the same 1.5 / 1 ratio.

The Vietnam-era GI Bill was replaced from January 1977 to June 1985 by the less generous Veterans Educational Assistance Program (VEAP). VEAP was a contributory program, where soldiers could contribute up to $2700 and the government would add $5400. The $8100 total compared to the Vietnam-era GI Bill benefits of over $12,000. Enlisted participation rates were very low. The Army had the highest participation rates, ranging from 20% to 25% between 1977 and 1985 (By comparison, Air Force participation rates were as low as 1%). VEAP also had low usage rates -- only 7% to 8% of veterans actually used any of their benefits, compared to about 70% of eligible veterans who used Vietnam-era benefits.

The New GI Bill (also called the Montgomery GI Bill) began in July 1985 for both active duty servicemen and, for the first time, for members of the selected reserve. The New GI Bill for reservists is more generous than the previous educational assistance program (Table 2). Also, reservists can begin using their benefits after serving only 180 days, in contrast to active duty soldiers who must serve two years. The ability to use educational benefits while still serving in the reserves makes the New GI Bill a valuable retention tool unique to the reserves. Except in very rare instances, active Army personnel must leave the service to use their educational benefits. Reservists, on the other hand, who wish to complete their college educations can earn benefits by reenlisting or extending for 6-years, and attend college while simultaneously continuing to serve in the Army.

Table 2

Educational Benefits For The Selected Reserves

	OLD EDUCATIONAL ASSISTANCE PROGRAM	NEW GI BILL
ELIGIBLES	Enlisteds, NPS, High School Graduates, AFQT I-IIIA	Enlisteds and Officers, High School Graduates, All AFQT Categories
BENEFIT TYPE	Incentives	Entitlement
OBLIGATION	6 Years Selected Reserve	6 Years Selected Reserve
BENEFIT	\$1000/yr \$4000/total	\$2520 at \$70/mo 1/2 Time \$3780 at \$105/mo 3/4 Time \$5040 at \$140/mo Full Time
HOW PAID	Reimbursement of School Expenses Paid Quarterly	Cash Paid Each Benefit Month

Source: Bemis and Gibbs (1987)

A traditional purpose of a GI Bill, assisting soldiers in transition to civilian life, is not relevant to the reserves, since most reservists are full-time employees in the civilian labor market. The New GI Bill did, however, aid high quality recruiting (Table 3) and retention. Because there was one year between the beginning of the New GI Bill and the increases in the reenlistment bonuses, it is possible to try to separate their effects on retention.

Data for the reserves has typically been very difficult to obtain. We are fortunate here to have several continuous time-series, obtained from the Department of the Army, Office of the Deputy Chief of Staff for Personnel. These include monthly data, from July 1983 to June 1987, for total 3-year and 6-year reenlistments in the Army Reserve and the Army National Guard, and for monthly accessions into those components six years earlier. As noted earlier, the Sixth QRMC was especially interested in the effects that reenlistment bonuses and the New GI Bill had on changing the relative proportion of 6-year versus 3-year reenlistments, thereby increasing the committed man-years of service.

Table 3

The New GI Bill Aided The Reserve Recruiting Effort

	LAST 12 MONTHS VEAP	FIRST 12 MONTHS NEW GI BILL	PERCENT CHANGE
<u>HIGHER QUALITY RECRUITS</u>:			
USAR AFQT I-IIIA RECRUITS	45%	56%	+24%
USAR HS GRAD RECRUITS	79%	86%	+9%
ARNG HS GRAD RECRUITS	71%	85%	+13%
<u>LONGER ENLISTMENTS</u>:			
USAR 6-YR ENLISTMENTS	68%	87%	+28%

Source: Department of the Army, Office of the Deputy Chief of Staff for Personnel.

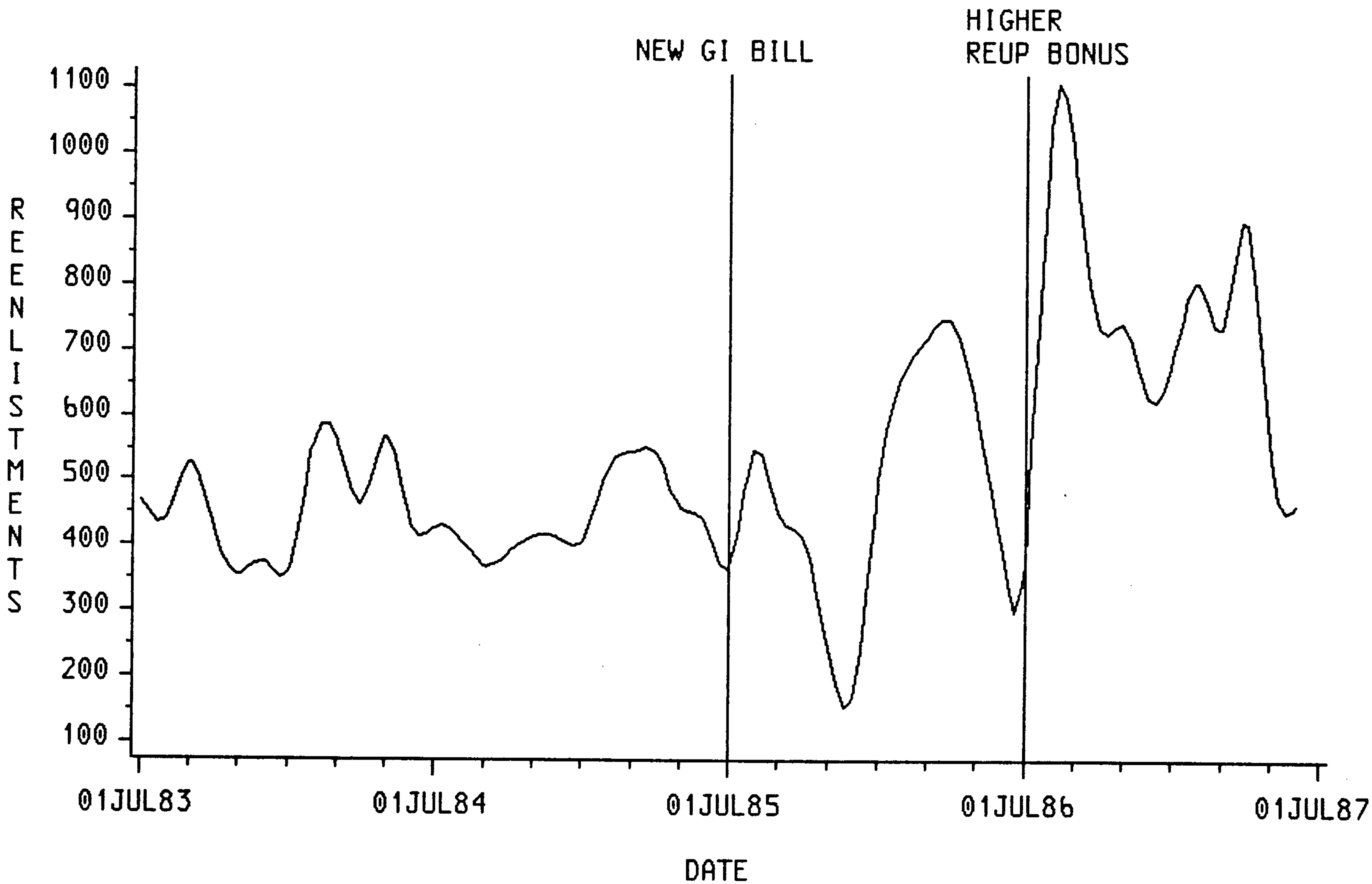

Figure 1. US Army Reserve 6–year reenlistments based on monthly data.

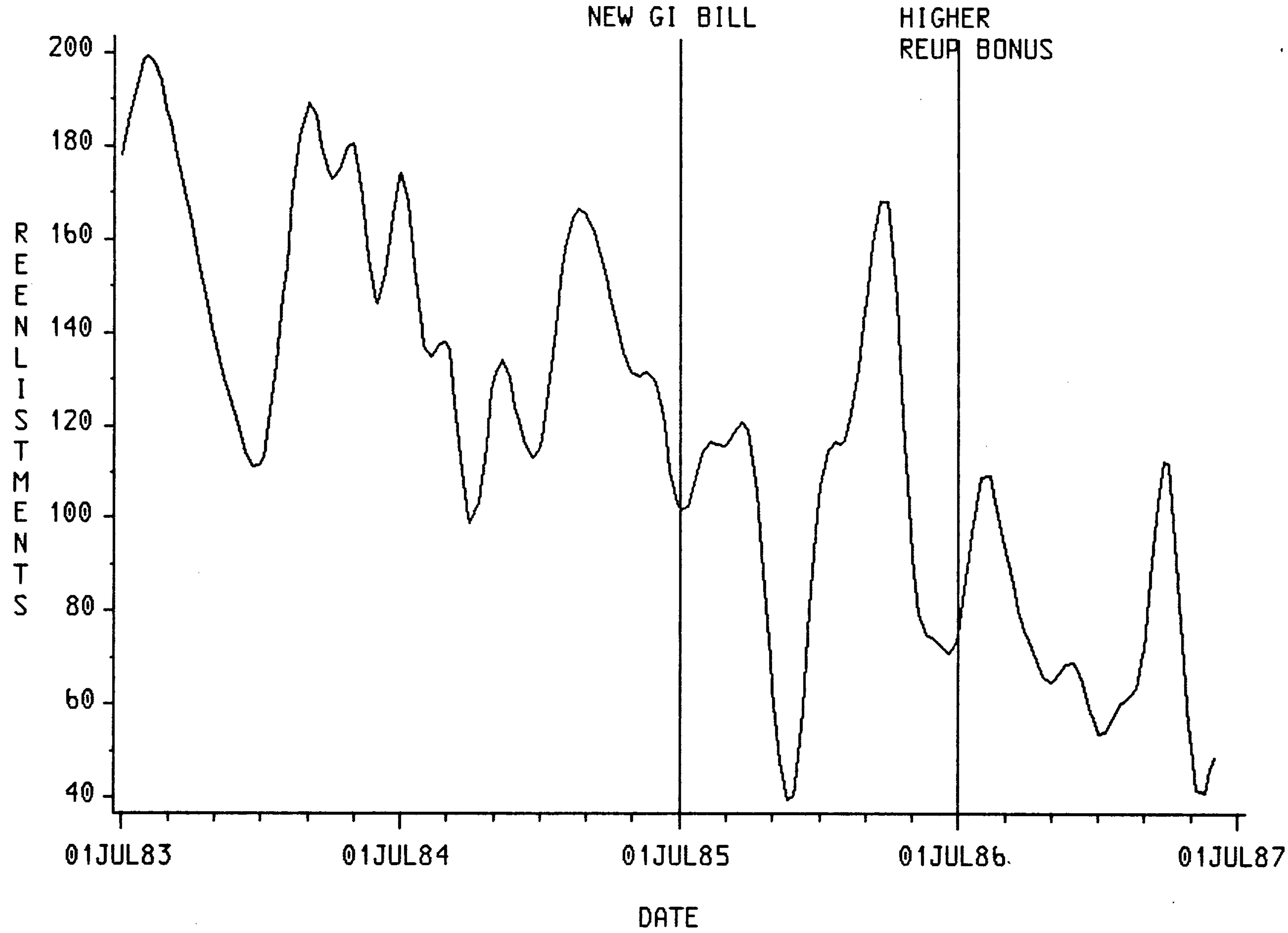

Figure 2. US Army Reserve 3—year reenlistments based on monthly data.

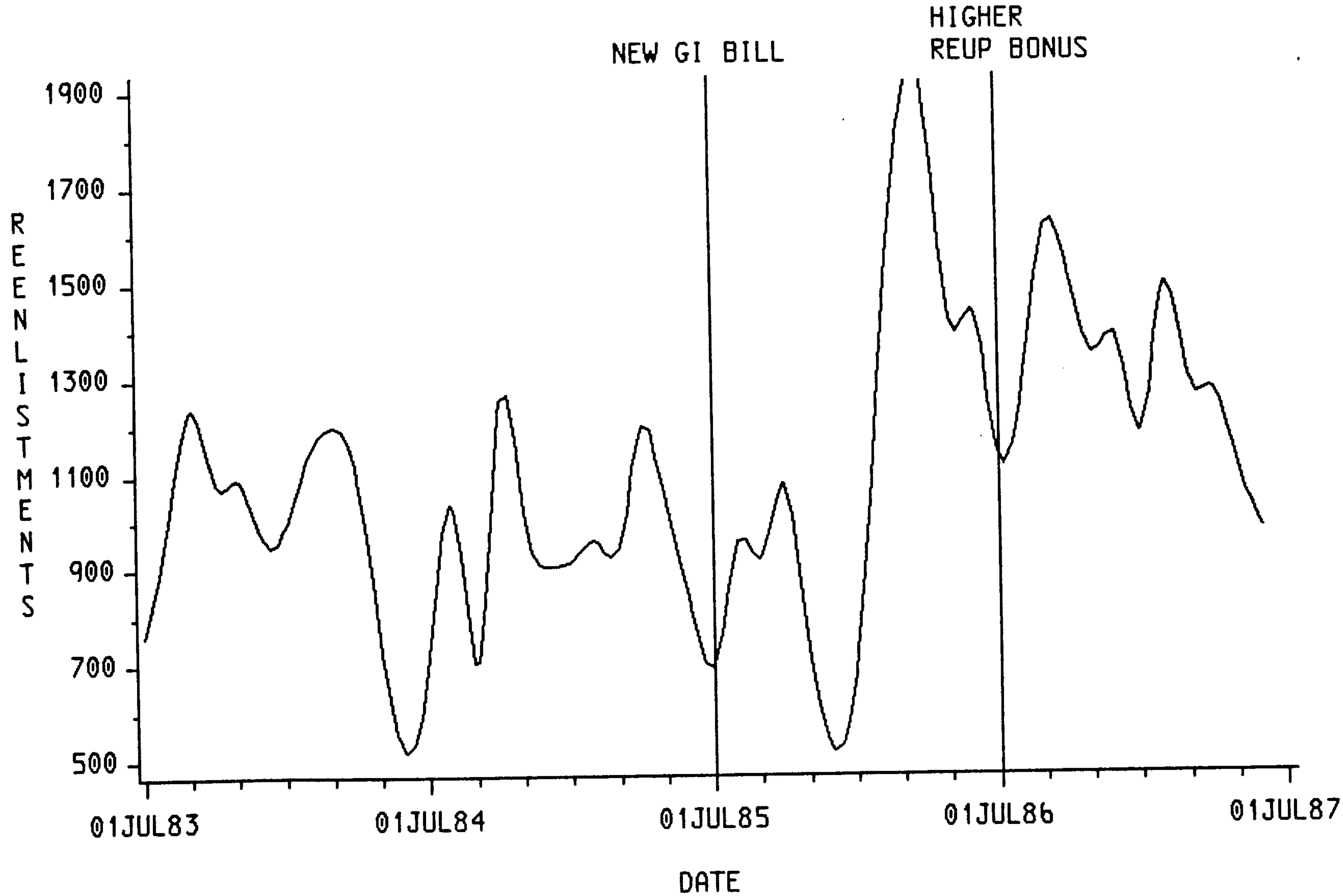

Figure 3. US Army National Guard 6-year reenlistments based on monthly data.

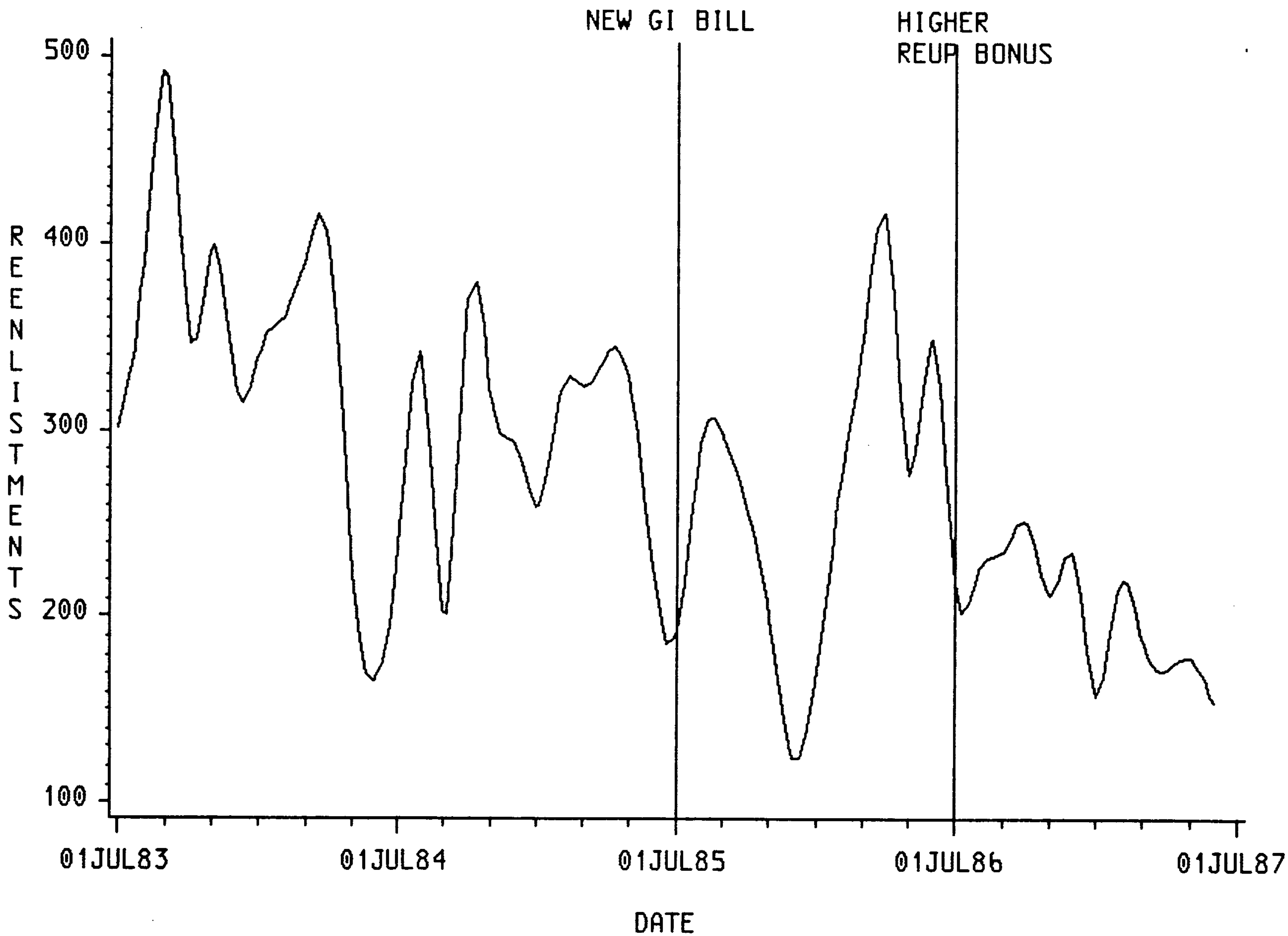

Figure 4. US Army National Guard 3–year reenlistments based on monthly data.

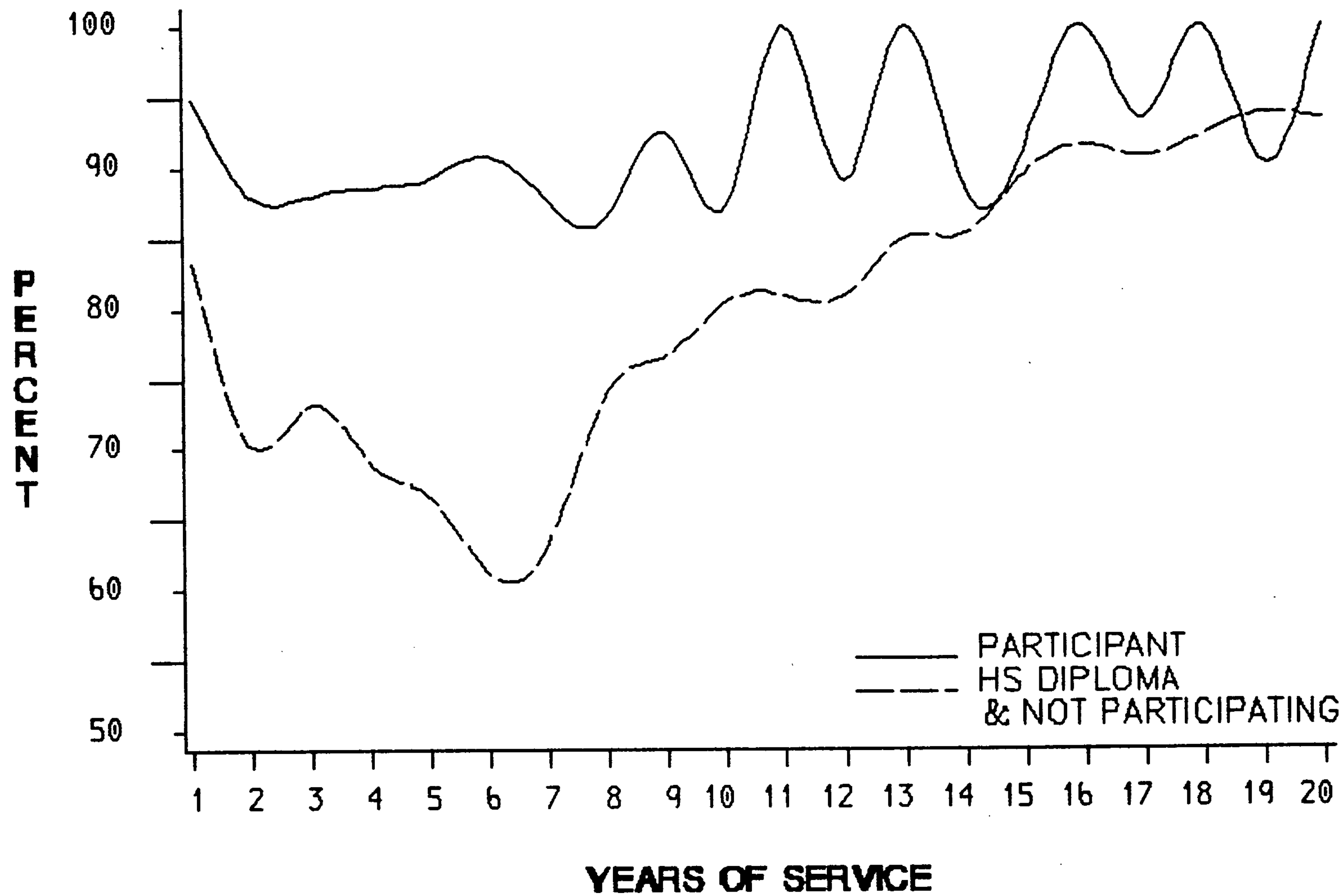

Figure 5. Continuation rate for enlisted US Army Reserve Montgomery GI Bill participants for fiscal year 1987.

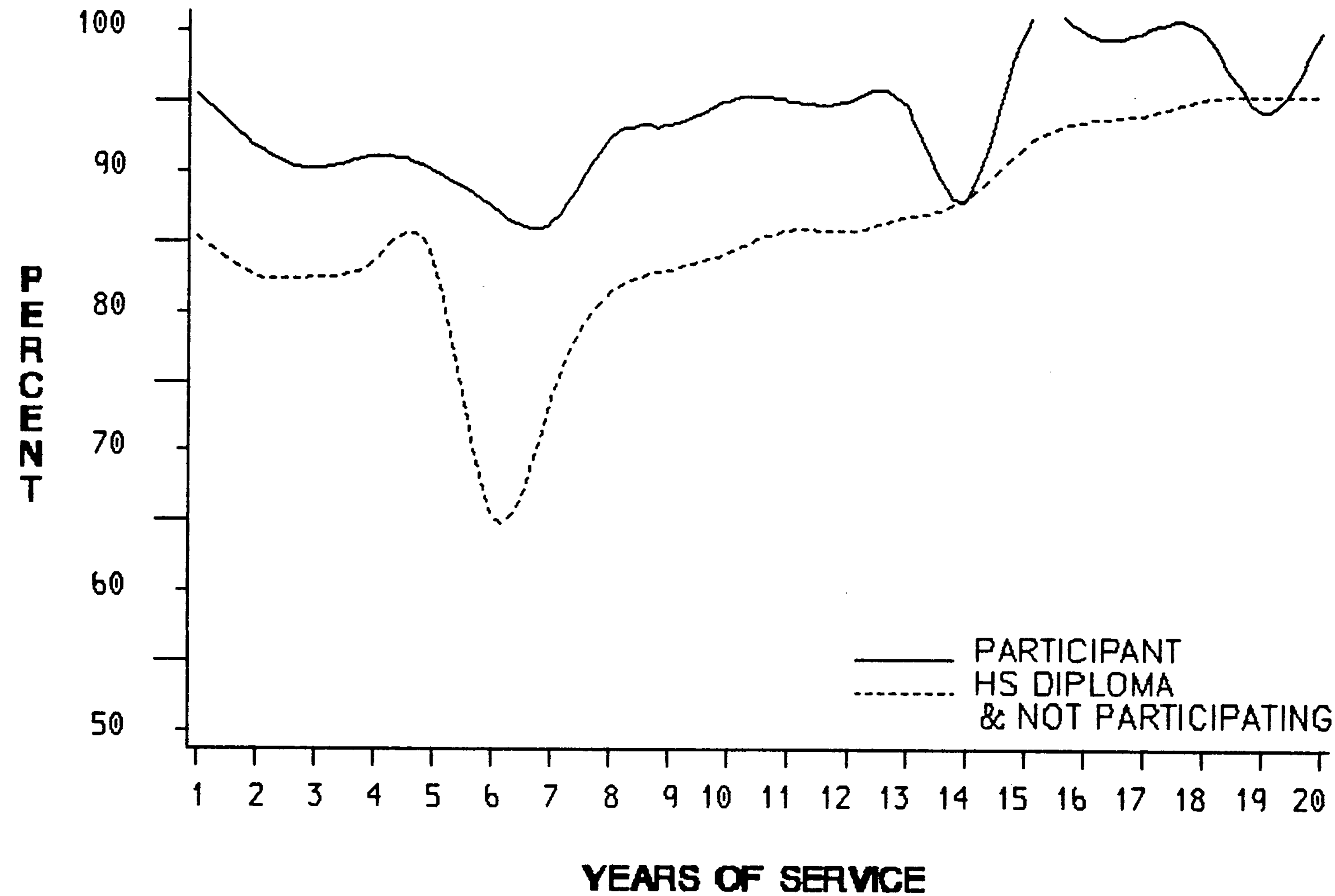

Figure 6 . Continuation rate for enlisted US Army National Guard Montgomery GI Bill participants for fiscal year 1987.

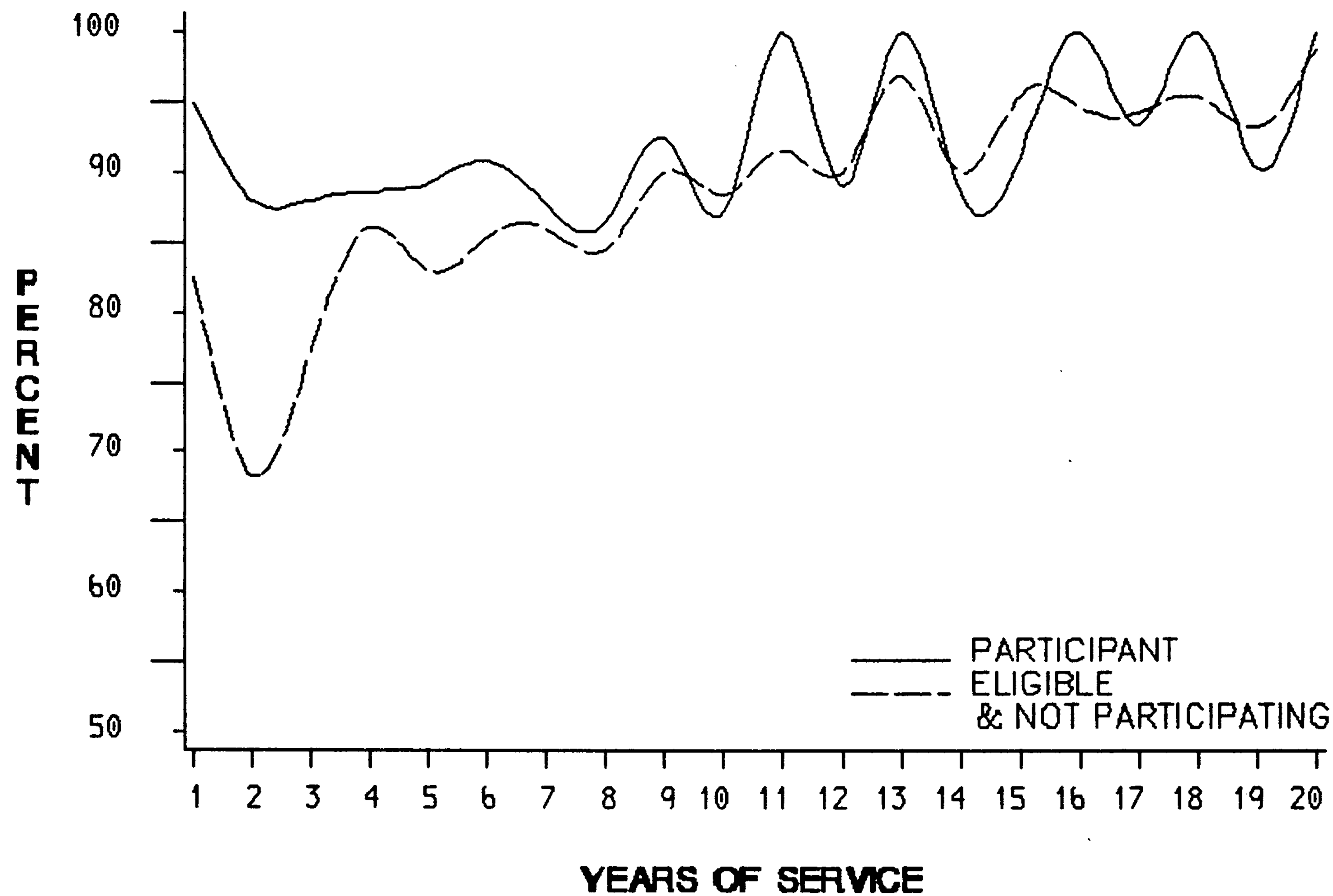

Figure 7. Continuation rate for enlisted US Army Reserve Montgomery GI Bill participants for fiscal year 1987.

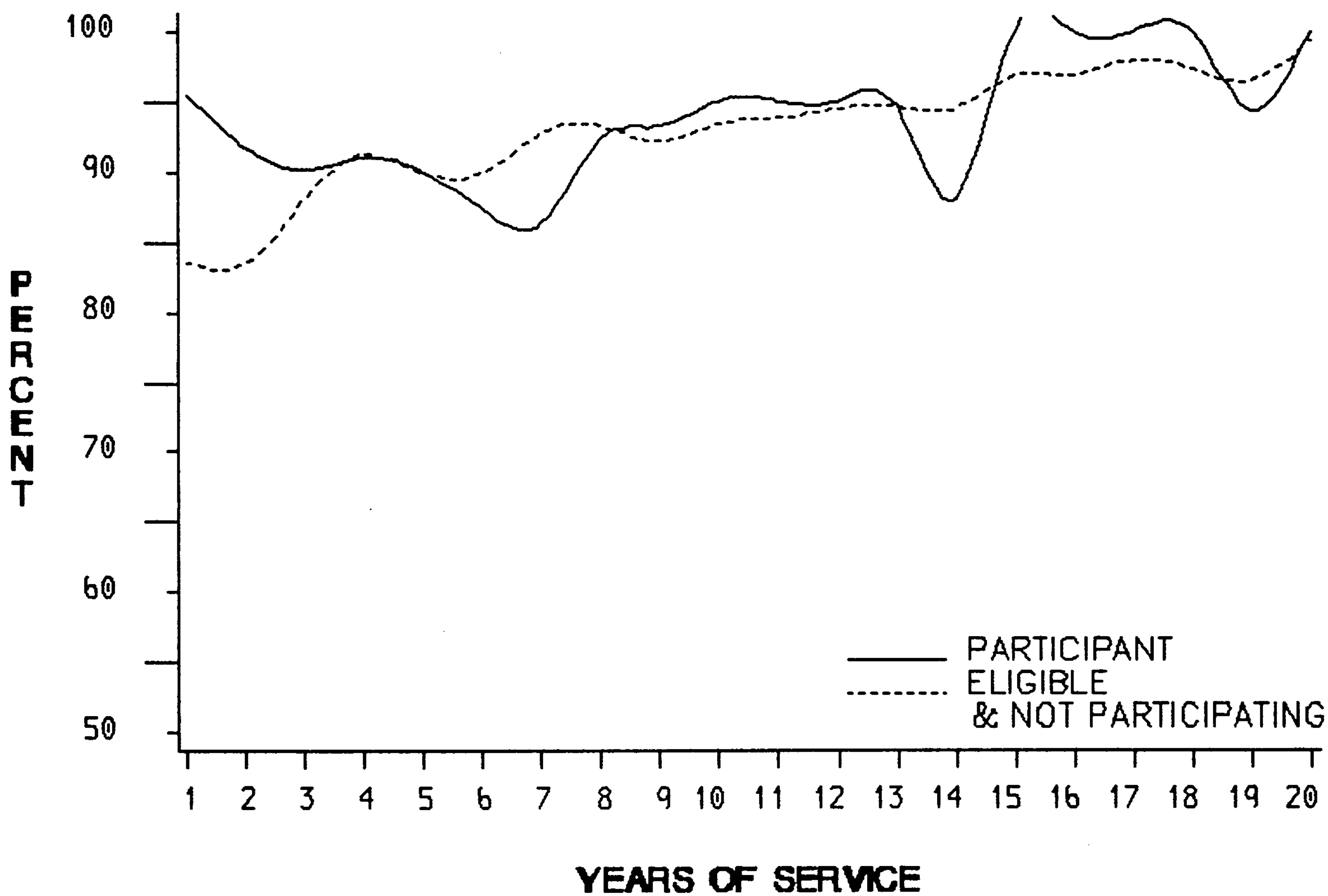

Figure 8 . Continuation rate for enlisted US Army National Guard Montgomery GI Bill participants for fiscal year 1987.

Figures 1 through 4 show the monthly 3-year and 6-year reenlistments for Army Reserve and National Guardsmen. Figure 1, for example, illustrates how 6-year reserve reenlistments increased with the inception of the New GI Bill, and increased further with the higher reenlistment bonuses. While some of the increased reenlistment terms appear to have come from potential 3-year reenlistees, as shown in Figure 2, we will show shortly that there was a net increase in 6-year enlistees from the new incentive programs. Data on continuation rates for New GI Bill participants was obtained from the Sixth QRMC.

Figures 5 through 8 show that participants in the New GI Bill program are more likely to remain in the reserves than their nonparticipating counterparts. Figures 5 and 6 show the annual continuation rates, i.e., the probability that a member will still be in service a year later, comparing New GI Bill participants with all high school graduates who are nonparticipants. The annual continuation rates were derived from data for the six month period from September 1986 through March 1987. The difference is most dramatic for those completing six years of service: in that category, New GI Bill participants in both the Guard and Reserve had continuation rates of about 90%, while the nonparticipants had continuation rates of less than 65%.

Even if we restrict the comparison to include only members eligible for the New GI Bill (high school diploma, no college degree, completed initial active duty for training, and a six year commitment), the comparison is still very favorable to the New GI Bill. Figures 7 and 8 show that participating members have generally higher continuation rates than nonparticipants, especially in the first seven years of service. These continuation rate comparisons are not conclusive, because it is not yet known whether the rates will be sustained over time, and the increase in continuation rates may not be solely due to the New GI Bill. Also, to the extent that the New GI Bill may have attracted recruits who have a lower "taste" for the military, there is a possibility that future reenlistment rates may fall. Nevertheless these early comparisons strongly suggest that a reduction in attrition can be attained through the use of the New GI Bill. In the next section we discuss further the implications for reserve retention of the higher reenlistment bonus program and the New GI Bill.

THE THEORY OF RESERVE RETENTION

Reservist service cannot easily be compared to civilian employment. Grissmer and Kirby (1985) and Burright et al. (1982) note that, unlike most civilian workers, reservists:

- Periodically must spend full-time on the reserve job
- Must legally commit to between one and six years of service
- May qualify for a pension
- Have an inflexible duty schedule

- o Have nonmonetary rewards, such as comaraderie

There are similarities with civilian jobs in that the moonlighting choice is made between income and leisure time. The civilian moonlighting hypothesis asserts that an employee's well-being depends upon total money earnings and leisure time. An employee will give up some leisure time and begin moonlighting if there is sufficient income from the second job. Similarly, an employee will give up some additional income and stop moonlighting if he gains a sufficient amount of additional leisure time. From the assumptions of the moonlighting hypothesis it follows that:

- o The lower the wages and lower the number of hours worked in the full-time job, the higher the probability of moonlighting

- o The higher the wages and lower the hours worked in the part-time job, the greater the probability of moonlighting

The value that personnel place on leisure time helps explain the extra emphasis that the reserves have made in recent years on convincing employers to allow reservists to spend their two week annual training time without forfeiting pay or benefits. Conflicts with their full-time employers are a major reason people stop moonlighting (Grissmer and Kirby 1988).

The fact that moonlighters measure their well-being based on consideration of their total income helps explain why wage incentives have had less effect on the reserves than on the active Army. Burright, et al. (1982) reported that the original reserve reenlistment bonuses had a much smaller effect than expected, based upon the experience of bonuses in the active Army. A given percentage of reserve pay may only be a very small percentage of soldiers' full-time plus part-time pay, and thus have very little effect upon soldiers' behavior.

We focus in this paper on the new economic incentives that may affect reserve retention. Increased retention can help reduce reserve manpower shortages and decrease the need for new enlistees. We consider here the effects on retention of:

- o The New GI Bill for Reservists

- o Higher reenlistment bonuses

As discussed in the last section, the New GI Bill is a retention tool for the reserves because, unlike the active Army, reservists can attend college and simultaneously continue to serve in the Army. The New GI Bill is an entitlement, available to all who meet the minimum requirements; only reenlistment bonuses can be used to channel soldiers into shortage occupations. Both types of incentives, however, can have two possible effects:

- o Market expansion -- increasing the total number of reservists

- o Increasing the committed man-years of service

Not everyone can be expected to react to economic incentives in the same way. The moonlighting decision can depend importantly upon:

- o Sex and Race
- o Age
- o AFQT Category
- o Full-time job opportunities in the civilian market
- o The time of year the moonlighting decision is made

Our monthly data from July 1983 to June 1987 includes only total reenlistments. Fortunately for this work, in that time period according to the Office of the Assistant Secretary of Defense (Reserve Affairs) the number of females reenlisting annually fluctuated in the narrow ranges of 7% to 9% for the Guard and 23% to 27% for the Reserve. Blacks were about 17% to 18% of annual Guard reenlistments and 23% to 27% of Reserve reenlistments. The average pay grade, a proxy for age, in the Guard increased only from E4.2 to E4.3 in that period, and in the Reserve increased from E4.1 to E4.2. Thus those variables were fairly stable over the period of the data. Nevertheless their omission might still cause serious problems with the estimates (see Appendix A). AFQT category can be expected to be correlated with New GI Bill participation, and we used unemployment rates and a seasonal dummy variable for the summer months to handle the other variables.

Interestingly, previous research (Burright, et al. (1982)) has shown that nonwhites, females, and older reservists have relatively higher <u>attrition rates</u>, but those same groups also have relatively higher <u>reenlistment rates</u>. Higher mental category soldiers tend to have lower attrition rates and lower reenlistment rates. Our models in this report attempt to explain reenlistment rates, which are defined here to be the number of soldiers reenlisting divided by accessions six years earlier. From the policy point of view, our rates may be the most interesting because policymakers may not care if particular groups have high reenlistment rates if relatively few of them ever reach the reenlistment point. From the analytic point of view, using total accessions in the denominators of our dependent variables means that in this version of our models there is a mesurement problem in our dependent variable (see Appendix A).

EMPIRICAL RESULTS

We obtained some quantitative estimates of the effects of the new benefit programs by estimating two kinds of models. In the first type of model we considered the rates of 3-year and 6-year reenlistments. In the second set of models we considered the relative share of 6-year and 3-year reenlistments.

For each type of model we examined three kinds of effects: autocorrelation, program effects, and environmental effects. Autocorrelation is a term that describes the fact that so many economic series move up or down together that it is difficult to determine whether cause and effect relationships exist. Generalized least squares (GLS) and the Cochrane-Orcutt procedure were used to correct for autocorrelation. Environmental effects were measured by the unemployment rate and a seasonal term representing the summer months. We measured for program effects by running regressions of monthly reenlistments against dummy variables, one of which was set equal to 0 until the start of the New GI Bill and equal to 1 afterwards (NEWGIBILL), and one of which was set equal to 0 until the start of the higher reenlistment bonuses and equal to 1 afterwards (NEWBONUS). Sudden shifts in policy can cause discontinuities in labor market time-series (Ashenfelter and Johnson 1969), and the measurement of their impact using dummy variables is a well-developed method in econometric and time-series research (Hooper and Wilson 1974; Gujarati 1978).

Tables 4 through 7 show our empirical estimates of the 3-year and 6-year reenlistment rates into the Guard and Reserve. As previously mentioned, we had to consider the possibility of autocorrelation, which usually affects the coefficients very little -- they remain unbiased in the presence of autocorrelation -- but which can inflate the values of the tests for significance. The values of the autoregressive parameters shown are the value of the measure of autoregression before correcting for its presence. The other coefficients and their significance levels are for the corrected values. The unemployment rate used, a measure of full-time civilian job opportunities, was the national rate. It gave a better statistical fit than several seasonally adjusted and unadjusted measures of youth unemployment, and it still was statistically significant in only 1 out of the 4 cases. The dummy variable for the summer months was included to ensure that the new economic incentives were not picking up a seasonal change. Other variables that were tried but not included in the model were the number of reserve recruiters and advertising costs. Recruiters and advertising clearly belong more in an enlistment model than a retention model, but the numbers may have been a proxy for a measure of available reserve resources. Finally, a dummy variable for the soldiers who came in at the beginning of the original enlistment bonus was not significant.

The new reenlistment bonuses were significant in 3 out of the 4 cases, and in all cases they had the expected sign. Soldiers who do not have economic incentives have little reason to reenlist or extend for six years, even if they intend to stay in the Army. The new bonuses increased 6-year reenlistment rates, as expected. At the same time, the fact that 6-year bonuses were higher than 3-year bonuses resulted in some prospective 3-year reenlistees instead reenlisting for 6-years, which is the reason the 3-year bonus coefficients are negative. The higher reenlistment bonuses resulted in 3-year reenlistees increasing their committed man-years of service.

The New GI Bill variables were significant in 2 out of the 4 cases, the 3-year Reserve contracts and the 6-year Guard contracts. All of the variables had the expected signs. The effect of the New GI Bill on 6-year reenlistments was positive and, since a 6-year reenlistment was required some soldiers switched from 3-year terms to 6-year terms so the effect on 3-year reenlistments was negative. In addition, all of the economic incentive programs were significant in the ratio models we will describe shortly, which will also illustrate further how the incentive programs increased reservists' committed man-years of service.

Table 4

GLS Estimates For Reserve Reenlistments
Army Reserve, 6-Year Terms
Monthly Reenlistment Rates

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	.044	1.0
NEW GI BILL	.010	0.9
NEW BONUS	.031	2.7 **
UNEMP	.004	1.2
SUMMER	-.004	-0.4
AUTOREGRESSIVE PARAMETER	-.119	-0.8

$R^2 = .22$

** Statistically significant at the .01 level.

Table 5

GLS Estimates For Reserve Reenlistments

Army Reserve, 3-Year Terms

Monthly Reenlistment Rates

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	.019	2.5 *
NEW GI BILL	-.008	-4.2 **
NEW BONUS	-.008	-4.0 **
UNEMP	.001	1.5
SUMMER	.003	1.6
AUTOREGRESSIVE PARAMETER	-.122	-0.9

R^2 = .67

* Statistically significant at the .05 level.

** Statistically significant at the .01 level.

Table 6

GLS Estimates For Reserve Reenlistments

Army National Guard, 6-Year Terms

Monthly Reenlistment Rates

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	.035	0.5
NEW GI BILL	.026	2.0 *
NEW BONUS	.018	1.3
UNEMP	.013	1.3
SUMMER	-.025	-2.2 *
AUTOREGRESSIVE PARAMETER	-.448	-3.5 **

$R^2 = .22$

*   Statistically significant at the .05 level.

Table 7

GLS Estimates For Reserve Reenlistments

Army National Guard, 3-Year Terms

Monthly Reenlistment Rates

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	-.004	-0.2
NEW GI BILL	-.003	-0.9
NEW BONUS	-.007	-2.1 *
UNEMP	.006	2.5 *
SUMMER	-.002	-0.8
AUTOREGRESSIVE PARAMETER	-.157	-1.1

$R^2 = .42$

* Statistically significant at the .05 level.

By converting our reenlistment rates to numbers of contracts by multiplying by the total monthly accessions, we can estimate the net change in monthly reenlistment contracts. After the start of the New GI Bill, there was a monthly drop of about 35 in the number of 3-year reenlistees, which was approximately offset by an increase of an additional 41 6-year reenlistees. Thus for Reservists, the net effect of the New GI Bill was simply to increase the committed man-years of service.

The results for the higher bonuses were more clear-cut. After the higher bonuses were started 3-year Reserve reenlistments dropped by 26 contracts/month, but that was more than offset by the 234 contracts/month increase in 6-year reenlistments. Thus the new bonus program increased both total Reserve reenlistments and committed man-years of service.

National Guardsmen, on the other hand, had sharp net increases in reenlistments from both higher bonuses and the New GI Bill. Higher bonuses resulted in an increase in 6-year Guard reenlistments of 236 contracts/month, and a decrease of 3-year Guard reenlistments of only 35 contracts/month, for a net gain of 201 contracts/month.

In contrast to the Army Reserve, in which the New GI Bill appears to have drawn 6-year reenlistees almost entirely from the pool of 3-year reenlistees, thereby increasing the committed man-years of service, the Guard also received a large net increase in contracts from the New GI Bill. 3-year Guard reenlistments dropped by only 7 contracts/month, while 6-year Guard reenlistments increased by 266 contracts/month, a net gain of 259 contracts/month.

The various bonus and New GI Bill elasticities are shown in Table 8, and compared to the Gates Commission (1970) assumed elasticities and the Brinkerhoff and Grissmer (1984) measured elasticities (an elasticity is the percent change in reenlistments caused by a 1% increase in reenlistment benefits). There is no direct comparison with this work, because reserve reenlistment bonuses and GI Bill benefits for reservists were unheard of when the Gates Commission completed its work in 1970. Nevertheless our work confirms the Brinkerhoff and Grissmer conclusions, that reserve reenlistments are less sensitive to changes in economic incentives than are active Army reenlistments. A dollar of reserve pay is equal to a dollar of any other pay, but active Army soldiers behave in response to the percentage change in their Army pay, but reservists behave in response to the percentage change in their <u>total</u> full-time plus reserve pay. Thus equal percentage changes in Army pay will be a much smaller percentage increase of reservists' income than of active Army soldiers' income. Finally, our significant coefficients on the program variables confirm the work of Burright et al. (1982) that reserve behavior is consistent with moonlighting theories, but our relatively small elasticities also suggest that other more complex variables (comaraderie, job satisfaction) may also importantly affect the retention decision.

Table 8

Supply Elasticities For Reserve Compensation

REPORT	ELASTICITY
Gates Commission (1970):	
Assumed Pay Elasticity	.3 to .8
Brinkerhoff and Grissmer:	
Measured Pay Elasticity Guard and Reserve	.2
This Report:	
New Reup Bonuses:	
USAR 6-Year	.21 **
USAR 3-Year	-.44 **
ARNG 6-Year	.24
ARNG 3-Year	-.42 *
New GI Bill:	
USAR 6-Year	1.17
USAR 3-Year	-.36 **
ARNG 6-Year	1.10 *
ARNG 3-Year	-.22

* Statistically significant at the .05 level.
** Statistically significant at the .01 level.

Note. 3-year values are cross-elasticities: the percent change in 3-year reenlistments due to a 1% increase in 6-year reenlistment benefits.

Our second analytical approach is illustrated in Tables 9 and 10, in which the dependent variables were 3-year reenlistments as a percentage of the total of 3-year and 6-year reenlistments. These ratios are illustrated in Figures 9 and 10, which clearly show how the increases in 6-year reenlistment benefits increased the proportion of soldiers reenlisting for longer terms. Using ratios in our analysis may have eliminated the effects of some of the model specification problems described earlier. For example, assuming only that 3-year and 6-year reenlistees would react similarly to environmental variables like the unemployment rate means that those variables would cancel out of a ratio. The R^2 values do show that these models account for from 87 percent to 90 percent of the variation in the ratios. Also, all of the explanatory variables are statistically significant.

From the results in Table 9 we can compute that from July 1983 until the start of the New GI Bill, the ratio of 6-year Reserve reenlistees to 3-year Reserve reenlistees was about 3 to 1, or 75.3 percent 6-year contracts. When the New GI Bill started, the ratio rose by 5.6 percent, to 80.9 percent, and the new bonuses raised the ratio another 8.0 percent, to 88.9 percent. Similar effects are shown in Table 10 for the National Guard. (The corresponding tables for 6-year reenlistees are not shown because, except for the constant term, the coefficients are equal and opposite in sign. For example, a 5.6 percent decrease of 3-year Reserve reenlistments by definition means an increase of 5.6 percent in the ratio of 6-year Reserve reenlistments). For both the Reserve and National Guard, Tables 9 and 10 show how the New GI Bill and the higher bonuses increased the committed man-years of service.

Table 9

GLS Estimates For Reserve Reenlistments

Army Reserve, 3-Year Terms

Percentage Of Total Of 3-Year And 6-Year Reenlistments

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	.133	2.5 *
NEW GI BILL	-.056	-5.9 **
NEW BONUS	-.080	-8.0 **
UNEMP	.014	2.0 *
SUMMER	.024	2.9 **
AUTOREGRESSIVE PARAMETER	-.044	-0.3

R^2 = .90

* Statistically significant at the .05 level.

** Statistically significant at the .01 level.

Table 10

GLS Estimates For Reserve Reenlistments

Army National Guard, 3-Year Terms

Percentage Of Total Of 3-Year And 6-Year Reenlistments

VARIABLE	COEFFICIENT	T-RATIO
INTERCEPT	.141	3.2 **
NEW GI BILL	-.040	-5.1 **
NEW BONUS	-.056	-6.7 **
UNEMP	.013	2.3 *
SUMMER	.018	2.8 **
AUTOREGRESSIVE PARAMETER	-.190	-1.3

$R^2 = .87$

* Statistically significant at the .05 level.

** Statistically significant at the .01 level.

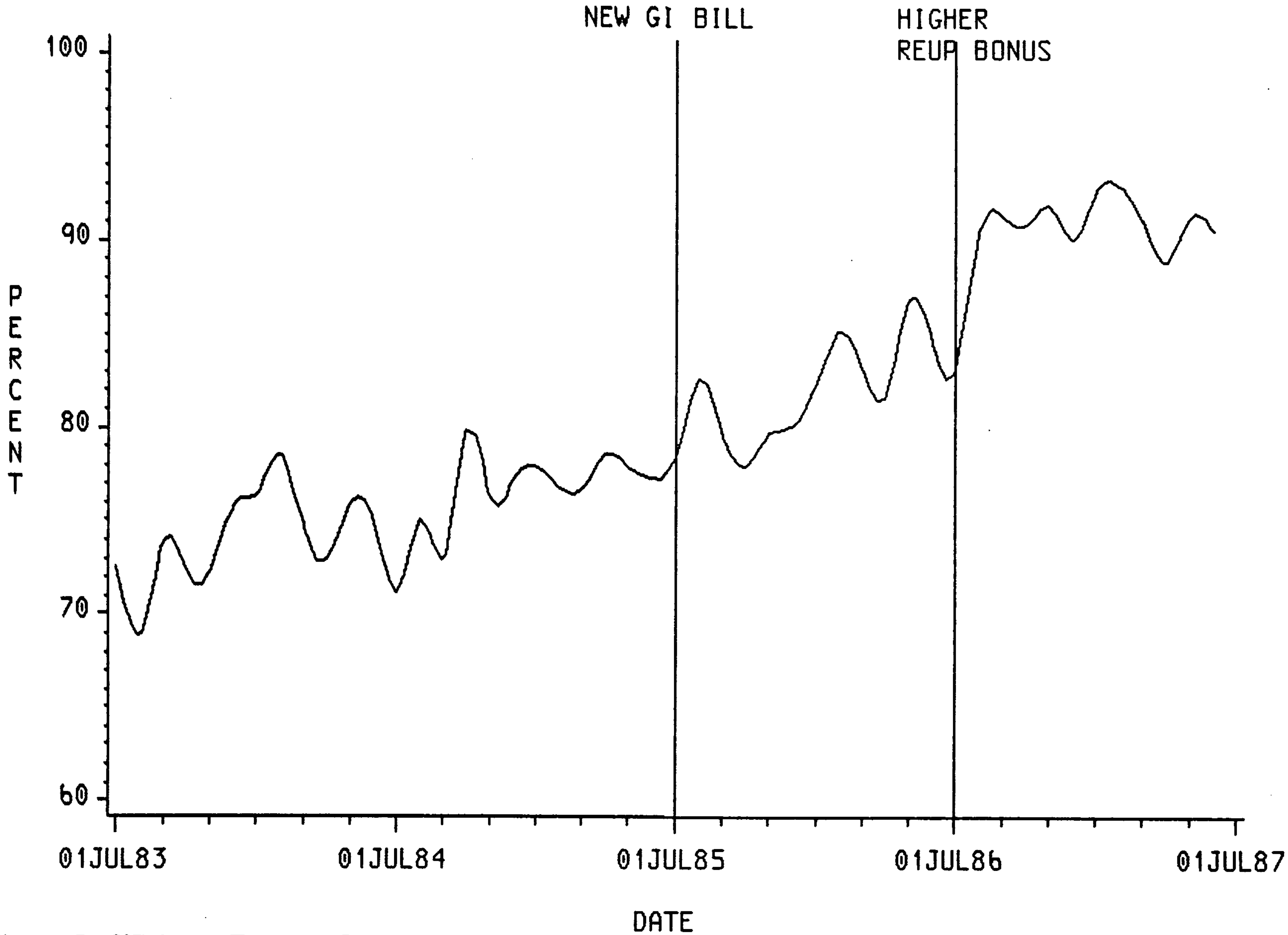

Figure 9. US Army Reserve 6–year reenlistments as a percent of total 3–year and 6–year reenlistments.

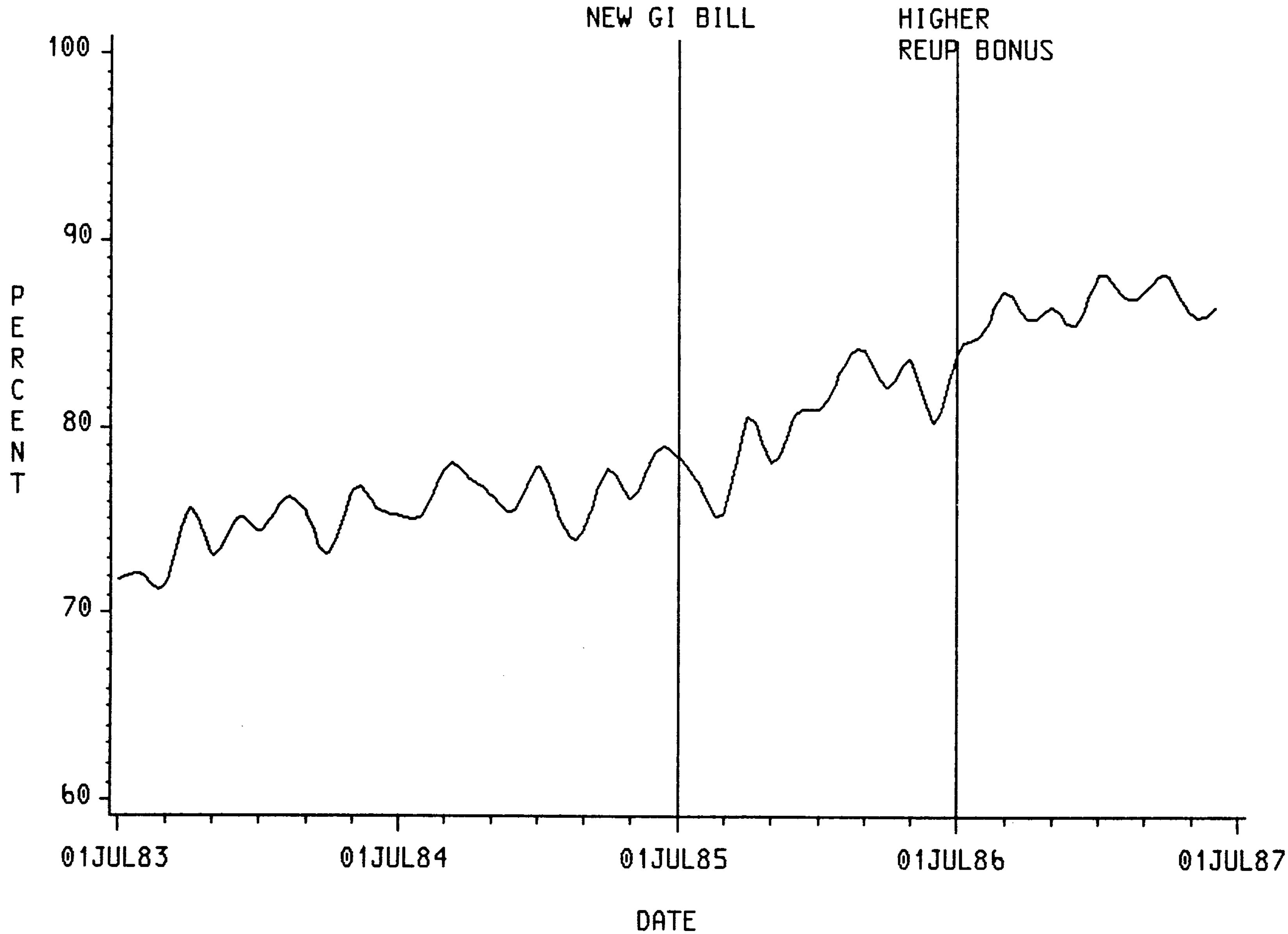

Figure 10. US Army National Guard 6–year reenlistments as a percent of total 3–year and 6–year reenlistments.

CONCLUSIONS

The results of this paper are summarized in Table 11. Higher bonuses resulted in a net increase in reenlistment contracts and longer committed man-years of service for both the Army Reserve and Army National Guard. The New GI Bill increased the committed man-years of service for both the Guard and Reserve, and resulted in a large net increase in reenlistment contracts for the National Guard.

For Army policymakers, both the higher reenlistment bonuses and the New GI Bill provide needed incentives for the Army Reserves to maintain needed personnel strength. Previously Grissmer and Hiller (1983) and Dale (1987) showed that bonuses increased the number of committed man-years of service and also lowered attrition rates, so that soldiers who receive bonuses tend to honor their committments. Thus reenlistment bonuses tend to keep soldiers in the Army, even if they subsequently have changes in their marital status or their full-time careers.

The New GI Bill is a tool for attracting and holding high quality soldiers. As long as the Total Force Policy remains in effect the Army will want reservists to be as high quality as soldiers in the active Army. The New GI Bill will be beneficial even if soldiers subsequently leave after they graduate. There has been some concern expressed in recent years about the increase in average age of the reserve forces (Enns 1985). If New GI Bill participants leave after graduation, they can be replaced by younger soldiers, and their expected lower attrition rates would help offset the cost of their benefits and training.

The Defense Manpower Data Center has been gradually gathering more and more detailed data on reservists, and the Army has been building a base of Reserve survey data (Elig 1983), so eventually more disaggregated time-series research than this may be done to determine more precisely the effects of economic incentives on soldiers with different demographic and personal characteristics.

Table 11

Summary Of Key Ideas

<u>IN TERMS OF TOTAL ENLISTMENTS:</u>

<u>AFTER THE NEW GI BILL</u> (after 1 Jul 85):

-- There was an increase of about 41 6-year Army Reserve reenlistments each month, which was approximately offset by a decrease of about 35 3-year Reserve contracts each month.

-- There was an increase of about 266 Army National Guard 6-year reenlistments each month, and a decrease of only about 7 3-year Guard reenlistments each month.

<u>AFTER THE HIGHER REENLISTMENT BONUSES</u> (after 1 Jul 86):

-- An additional 234 Army Reservists reenlisted for 6-year terms each month, and only 26 fewer Reservists reenlisted for 3-year terms each month.

-- An additional 236 Army National Guardsmen reenlisted for 6-year terms each month, and only 35 fewer Guardsmen reenlisted for 3-year terms each month.

Table 11 (Continued)

Summary of Key Ideas

<u>IN TERMS OF RELATIVE PERCENTAGES OF 3-YEAR AND 6-YEAR REENLISTEES:</u>

<u>BEFORE THE NEW GI BILL</u> (1 Jul 83 - 30 Jun 85):

- -- Among 3-year and 6-year Reserve reenlistees, an average of 75.3% reenlisted for 6-year terms each month, and 24.7% reenlisted for 3-year terms each month.

- -- Among 3-year and 6-year National Guard reenlistees, an average of 75% reenlisted for 6-year terms each month, and 25% reenlisted for 3-year terms each month.

<u>AFTER THE NEW GI BILL</u> (after 1 Jul 85):

- -- Monthly 6-year relative Reserve reenlistments increased by 5.6%, to 80.9%. Relative 3-year Reserve reenlistments dropped to 19.1%.

- -- Monthly 6-year relative National Guard reenlistments increased by 4%, to 79%. Relative 3-year National Guard reenlistments dropped to 21%.

<u>AFTER THE HIGHER REENLISTMENT BONUSES</u> (after 1 Jul 86):

- -- Monthly 6-year relative Reserve reenlistments increased by 8%, to 88.9%. Relative 3-year Reserve reenlistments dropped to 11.1%.

- -- Monthly 6-year relative National Guard reenlistments increased by 5.6%, to 84.6%. Relative 3-year National Guard reenlistments dropped to 15.4%.

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APPENDIX A

ESTIMATION ISSUES

As mentioned in the text, data limitations caused a number of difficult and insurmountable estimation problems. In this section we examine the possible sources of bias in our equation estimates.

First, we had difficulties in correctly defining the dependent variable. Ideally, we would have used reenlistments as a fraction of the total number of soldiers eligible to reenlist, but we only had available the total monthly accessions six years earlier. This means that our dependent variable was measured with error, a situation that normally means that the estimates will be inefficient but nevertheless consistent. In this case, however, the measurement error is primarily due to attrition, which is correlated with the explanatory variables so the estimates are also likely to be biased.

In an an earlier version of this report, we used only total reenlistments, rather than reenlistment rates, as dependent variables, because it was extremely difficult to get even monthly accession data. The effects that we got changed surprisingly little when we finally obtained and used reenlistment rates in our equations, so perhaps the measurement error we still have will not ultimately be shown to be serious. Nevertheless we currently cannot be certain of the accuracy of our regression results. (Note also, however, that in our ratio models even if we had eligibility data the denominators would still cancel out in the dependent variables, so measurement error in the dependent variables is not a problem in those equations).

Second, our equations suffer from omitted variable bias. We would like to have been able to disaggregate our results by age, sex, race, and AFQT score, but we were unable to do so. The expected effects of AFQT are unclear. Normally in the active Army higher AFQT soldiers reenlist at relatively lower rates, but in the reserves soldiers can more easily attend college while remaining in the Army, so they would have more reason to reenlist.

Older soldiers, females, and blacks tend to have higher attrition rates but also higher reenlistment rates, so their increasing proportions of reenlistments means that our coefficients are probably biased upward. As noted earlier, the absolute changes in the reenlistment proportions are relatively small: for example, over the four year period of our data blacks only increased from 17% to 18% of Guard reenlistments and 23% to 27% of Reserve reenlistments. Nevertheless the important factor is not necessarily the absolute size of the omitted variables but their covariance with the included variables, so even a small variation in the fraction of minority reenlistments could potentially impart large biases in the parameter estimates.

Third, the bonus programs present multiple problems. To the extent that MOS coverage was not constant during the period, the coefficient estimates are biased and inconsistent. In addition, bonuses (and also educational benefits) are sometimes used to respond to shortages in past retention. This would result in correlation between benefits and poor retention, biasing our results downward and making benefits appear less effective than they really are.

If data on bonus amounts and MOS coverage becomes available, these problems can be overcome by using Hatanaka's two-stage estimator (Fomby, et al. 1984), or estimators developed by Cosslett and Lee (1985). Hosek and Peterson (1985) dealt with the problem of simultaneity in active Army bonus programs by using occupation-specific dummy variables. In any case, when these corrections are not made the virtually universal result is that the parameter estimates are biased downward. So here, at least, our results probably underestimate the true effectiveness of the reserve economic incentives.

Table A-1 summarizes the possible biases in our results. As more and better reserve data becomes available, the issues described here may be fertile ground for future research. In the meantime, however, our results must be considered tentative.

Table A-1

Possible Directions of Regression Coefficient Bias

Factor	Probable Bias Direction
Dependent Variable	±
Age	+
Sex	+
Race	+
AFQT	±
Bonus	-

Note. + means the reported effects of the policy variables are probably too large, - means they are probably too small, and ± means the effects are uncertain.

Manpower and Personnel Policy Research Group

Working Paper MPPRG 89-09

ARMY MANPOWER COST SYSTEM: THE CONCEPTUAL DESIGN OF THE ARMY RESERVE COMPONENT LIFE CYCLE COST ESTIMATION MODEL

M. STUART DAVIS, P. HOGAN
R. HUNTER, L. MAIRS
D. ROSE, M. SIMMONS

MAY 1989

Reviewed by:

David K. Horne

David K. Horne
Acting Leader, Manpower and Personnel Planning Team

Approved by:

Timothy W. Elig

Timothy W. Elig
Acting Chief, Manpower and Personnel Policy Research Group

Cleared by:

CURTIS L. GILROY, Acting Director

MANPOWER AND PERSONNEL RESEARCH LABORATORY

U.S. ARMY RESEARCH INSTITUTE
FOR THE BEHAVIORAL AND SOCIAL SCIENCES
5001 Eisenhower Avenue, Alexandria, VA 22333-5600

FINAL REPORT

ARMY MANPOWER COST SYSTEM: THE CONCEPTUAL DESIGN OF THE ARMY RESERVE COMPONENT LIFE CYCLE COST ESTIMATION MODEL

PROJECT DIRECTOR: MATTHEW BLACK, Ph.D.

QUALITY ASSURANCE: RICHARD W. HUNTER, Ph.D.

AUTHORS:
M. Stuart Davis
Paul F. Hogan
Richard W. Hunter, Ph.D.
Lee S. Mairs (SAG Corp)
Donald E. Rose, Jr.
Michael Simmons

PRIME CONTRACTOR:
Systems Research and Applications Corporation
2000 North Fifteenth Street
Arlington, Va. 22201
(703) 558-4700

SUBCONTRACTOR:
SAG Corporation
900 South Washington Street
Suite 109
Falls Church, Va. 22046
(703) 538-4500

ARMY MANPOWER COST SYSTEM: THE CONCEPTUAL DESIGN OF THE ARMY RESERVE COMPONENT LIFE CYCLE COST ESTIMATION MODEL

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THE PROJECT CONTINUES TO FOCUS ON LIFE CYCLE COST MODELS

This Report Describes a Life Cycle Cost Model for Army Reserve Component Manpower

The Army Research Institute (ARI) and Systems Research and Applications (SRA) Corporation, along with SRA's subcontractor SAG Corporation, are developing the Army Manpower Cost System (AMCOS) to improve the Army's ability to analyze manpower costs. The Deputy Director of the Army Budget sponsors the project, and the Cost and Economic Analysis Center (CEAC), Office of the Assistant Secretary of the Army (Financial Management), is the primary user of project products.

This five-year research and development effort will build a series of budget, economic, and life cycle cost models for the Army's Active, Reserve, and Civilian Components. These models will improve the accuracy and flexibility of the Army's manpower cost estimating capability. Applications include estimates of life cycle manpower costs of weapon systems and force structures; economic tradeoffs among active, reserve, and civilian manpower; cost implications of personnel policies; and budget decisions.

This report develops a life cycle cost model for Army Selected Reserve manpower, discussing the purpose, uses, environment, and design of the model. The AMCOS team has already completed the Active Component (officer and enlisted personnel) life cycle manpower cost model. After using the model to estimate the manpower costs associated with the Armored Family Vehicles (AFV), CEAC is now using it to develop Independent Cost Estimates (ICEs) for all the Army's weapon systems. Consistent with the Army's priorities, the AMCOS team will analyze the life cycle cost of civilian manpower after completing the Reserve Component model.

The Reserve Component Serves a Valuable Role in the Total Army

The Army currently implements the Total Force Policy, which relies greatly on the Reserve Forces to meet national defense requirements. During the defense buildup of the 1980s, the Army Selected Reserve strength grew by 37.1 percent, compared to Active Component growth of only 2.5 percent.[1]

With constant pressures on its constrained resources, the Army must continually evaluate the cost of its force. The Army can often realize cost savings by placing appropriate functions in Reserve Component units. The life cycle cost model will evaluate potential savings associated with expanding this portion of total manpower.

Further more, the Sixth Quadrennial Review of Military Compensation (QRMC) devoted their review to examining reserve compensation and retirement issues. Their focus on reserve issues highlights the importance of this component and its costs.

The Purpose of Life Cycle Cost Estimates Guides AMCOS Development

This section defines the basic concept of life cycle costs and the implication for life cycle cost modeling. The AMCOS team designs its life cycle cost models drawing from these implications.

Life Cycle Cost Analysis Aids Resource Allocation Decisions.

Army Regulation 11-28 defines life cycle cost as the "total cost of an item or system over its full life. It includes the cost of development, acquisition, ownership, operation, maintenance, support, etc. and where applicable, disposal."

The Office of the Secretary of Defense (OSD) uses a similar definition:

> "Life cycle cost includes <u>all</u> WBS [(work breakdown structure] elements; <u>all</u> related appropriations; and encompasses the costs, both contract and in-house, for <u>all</u> cost categories. It is the total cost to the government for a system over its full life, and includes the cost of development, procurement, operating support and, where applicable, disposal." [DoDI 5000.33, p. 5.]

A life cycle cost model estimates the cost of a system, or a component of the system, over the system's life cycle. Hence, a manpower life cycle cost model estimates the cost of the manpower component over the system's life cycle. A life cycle cost model

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[1]The sources for the Reserve and Active Component figures are <u>Official Guard and Reserve Manpower Strengths and Statistics</u> (DMDC - RCS: DD-RA(M)1147/1148) and <u>DoD Selected Manpower Statistics</u>, respectively. The rates represent end strength growth from June and September 1980 to 1987.

does not estimate requirements but must take them as given.[2] Manpower requirements constitute one of the most important user inputs of a cost model. As such, the AMCOS design facilitates input from many sources and provides flexibility in adjusting requirements.

Manpower life cycle costs are not necessarily tied to a particular weapons system. The concept applies equally strongly to determining the cost of a given unit or configuration of personnel over a period of time. The life cycle manpower costs of the units in the Army Guard and Reserve force structure provide important resources information as well.

Primarily, cost analysis should aid decisions. The cost of choosing a particular option is the value of the resources that will no longer be available for other uses, or the opportunity cost.[3] Cost analysis provides decision-makers with an estimate of those resources for each alternative. Better cost estimates result in more informed decisions and improved resource allocation.

This view of life cycle cost estimates corresponds with Army policy, which states that one of the objectives of a cost analysis program is:

> "to improve the allocation and management of Army resources at all levels through rigorous cost analysis of Army programs, materiel systems, units and activities." [AR 11-18, p. 1-3.]

Life cycle cost estimates also assist in preparing budgets. They help determine what must be added to the budget and into which accounts. Often, they highlight when resource allocation decisions violate constraints on certain types of dollars.

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[2]The Army explicitly recognizes the independence of requirements definition, stating that the "cost analyst must know certain information about the system being costed. This information must be obtained from agencies which have the responsibility for setting the requirements for the system." [AR 11-18, p. 2-9]

[3]AR 11-28 defines opportunity cost as "the measurable advantage foregone as the result of the rejection of the next best alternative use of the resources... A dollar spent here is a dollar not available to be spent elsewhere." Although some consider opportunity cost an esoteric notion of interest only to economists, opportunity cost in fact asks, "Is this the best use we can make of these dollars?"

Nonetheless, too much focus on near-term budget constraints is misleading, as dollars tend to be fungible across accounts. Moreover, even the overall level of the Army's budget is negotiable, within limits, based upon the merits of the case.

The primary purpose of life cycle cost estimates, however, is resource allocation, not budget preparation. Although budgets must eventually reflect life cycle cost estimates for implemented systems, attempts to provide budget-level precision to costs in the near and distant future are suspect and may divert attention from issues that are important to the resource decisions.

Resource issues examine the current and future cost implications of allocation decisions. They require estimates with enough detail to make an informed investment decision but that are not so detailed as to obfuscate real allocation issues. Budget estimates, on the other hand, address issues such as the precise timing of obligations and outlays and require costs at a very refined level of detail.[4]

This emphasis concords with Army policy, which states:

> "Cost analysis employs an approach and procedures oriented more to macro rather than micro aspects of cost estimating. Cost analysis must demand completeness over preciseness, and be more concerned with issue development than with detailed accounting procedures. Simplification in level of cost analysis detail is essential." [AR 11-18, p. 1-3.]

Life Cycle Cost Modeling Provides Better Estimates Than an Ad Hoc Approach. The Army has found that sound life cycle cost estimates are an essential part of the weapon system acquisition process. The Army uses them to determine the affordability of a new system by focusing attention on designs that minimize total costs, not simply one or two high-visibility components of total cost. But, it is not necessarily self-evident that a life cycle cost model is the very best way to produce those estimates.

A competing approach is to continue to create ad hoc estimates, tailored to each particular system. This approach offers the potential advantage of allowing the cost analyst to focus on system-specific characteristics by using cost methods most appropriate to the case at hand. The analysis, while

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[4] An obvious analogy is the distinction between cost estimates used in preparing and discussing Program Objective Memorandum (POM) and Program Decision Memorandum (PDM) issues and those relevant to the President's budget and the resulting Program Budget Decisions (PBD). The former focus on resource allocation issues; the latter on pricing issues, assuming a fixed allocation of resources.

subject to overall guidelines, would not be forced into a narrow compartment dictated by cost methods that are adequate for many systems but ideal for none.

Although this argument has some merit, the opposite will most likely be the case. A sound system of life cycle cost models, well grounded in theory and rich in data, will free the cost analyst of many of the more mundane general problems and allow him or her to focus on problems peculiar to a particular system. The AMCOS team believes that life cycle models will improve cost estimates and result in more cost-effective weapon systems.

<u>The AMCOS Approach to Life Cycle Cost Modeling Is Evolutionary.</u> In the spirit of resource allocation modeling, AMCOS focuses on the major cost elements of Army Reserve Component manpower -- the ones that are more likely to affect decisions. The appropriate theoretical approach is crucial to the analysis. Even with a rigorous and detailed accounting of each manpower cost element, combining elements inappropriately can yield misleading cost estimates.

Manpower costs consist of numerous cost elements from a diverse set of data bases. The expense and difficulty of capturing all of them for any single estimate is prohibitive. However, in a model that will be used repeatedly for life cycle cost analysis, an investment in a more comprehensive data base becomes practical. Even in a general model, however, the analytical effort should focus on the elements that have the largest effect on cost differences among potential systems or configurations.

AMCOS uses an evolutionary approach to life cycle cost analyses. The AMCOS team anticipates that the model will change over time in response to insights gained from cost research and to the most pressing Army cost issues. Hence, the AMCOS team will first build a good, simple model that gets the big costs right. We plan to add complexity as cost analysts uncover a need. For this reason, modularity is at the heart of the AMCOS model design.

<u>Life Cycle Cost Models Perform Many Functions</u>

By design, the AMCOS Reserve Component life cycle cost model will help improve resource allocation decisions. These decisions address tradeoffs among competing systems, force configurations, or manpower requirements as they vary over time. The life cycle cost model (LCCM) will prove useful in any application where this is important.

<u>The LCCM Will Aid Active/Reserve Substitutions.</u> Because its manpower and other resources are constrained, the Army must

ensure that it allocates is resources most effectively. One way to achieve this goal is to shift full-time active duty personnel from appropriate functions, replacing them with less costly Reserve Component personnel. Shifting from full- to part-time soldiers may, however, reduce performance as well as costs. The AMCOS life cycle cost model will facilitate analysis of the potential cost savings associated with substituting reserve for active personnel.

The LCCM Will Aid Weapons Systems Tradeoffs. Life cycle manpower cost estimates of materiel systems aid in at least four key allocative decisions over the acquisition cycle. Manpower cost estimates of a proposed new weapon system can:

- calculate the resources the Army must expend to build and operate it;
- help the Army choose among competing systems to obtain the most capable mix of weapon systems for the resources expended;
- allow the Army to alter the design or configuration of a new system, trading hardware and manpower to obtain the most cost-effective weapon system; and
- determine the most cost-effective mix of active, reserve, and civilian manpower and skill and experience within a component to operate and maintain a materiel system over its life cycle.

The LCCM Will Perform Force Structure Analysis. Estimating the manpower life cycle costs of a proposed new element of the force structure or alternative Authorized Levels of Organization (ALO) would facilitate the estimates needed for the POM or FYDP. Cost estimation by grade and skill for the Reserve Component will help lead to the most efficient manpower mix.

The LCCM Will Perform Personnel Policy Analysis. Including actual pay tables and allowances and explicitly modeling personnel policies will allow rapid estimation of how changes in these policies would affect the costs of filling specific manpower positions. Analysis of the link between manpower policies and budget costs will result in better personnel planning, policy development, and budget support.

This Report Presents the Conceptual Design for the AMCOS Army Reserve Component Life Cycle Cost Model

The remaining chapters of this report develop our proposed design of the Reserve Component life cycle cost model. Chapter 2 examines the Army Guard and Reserve personnel system and the composition of the reserve force to determine their implications for a life cycle cost model. Chapter 3 discusses the theoretical problems and issues inherent to a model of this community. Chapter 4 presents the proposed design of the model, incorporating the findings of the previous chapters.

AN UNDERSTANDING OF THE ARMY RESERVE COMPONENT ORGANIZATION AND POLICIES IS ESSENTIAL TO CREATING A ROBUST COST MODEL

This Chapter Analyzes the Institutional Context of Army Reserve Component Manpower

To a large extent, the task confronting the development of a Reserve Component life cycle cost model is modeling the organization and personnel policies of the Army Guard and Reserve. This chapter analyzes the institutional aspects of the Army Reserve Component that must guide model development, including its missions, organization, and personnel systems. The model captures the most current aspects of the Army Guard and Reserve, to include changes resulting from the 6th QRMC. In addition, users can easily update the model should the Reserve Component compensation system change.

The Army Guard and Reserve Perform Vital but Different Missions

According to Title X of the U.S. Code, the Ready Reserve must "provide trained units and qualified persons available for active duty in the armed forces in time of war or national emergency and at such other times as the national security requires."

The Total Force Policy, initiated by the Secretary of Defense in 1969, has placed increased reliance on the reserve forces to meet national defense requirements. Especially in the 1980s, economic conditions have necessitated manpower and equipment reductions in the active Army and resulted in a larger role for the Guard and Reserve Forces.

Major General William Ward, Chief, Army Reserve, states that the Army Guard and Reserve both complement and reinforce the active force. He summarizes the differences in the Guard and Reserve missions by stating,

> "The reinforcing role belongs primarily to the National Guard with the majority of its forces in the combat arms. The Army Reserve provides the bulk of the complementary or supporting elements that fall into the categories of combat support and combat service support (CS and CSS)."

The main difference between the Army National Guard and the Army Reserve, however, lies not in the wartime mission but in the control and administration of the forces. Whereas the Army Reserve is largely a part-time version of the Active Component, the National Guard of each state remains constitutionally a state-administered military force with both state and federal missions.

The Guard's state mission is to provide organized units equipped and trained to protect life and property and to preserve peace, order, and public safety under orders of federal or state authorities. The state retains command of any unit not in federal service. However, when placed in federal service, the active Army exercises direct command over mobilized units.

The Reserve Component Contains Three Major Categories

Three major categories compose the Reserves -- the Ready Reserve, the Standby Reserve, and the Retired Reserve. In terms of both costs and strategic significance, the Ready Reserve is the most important Reserve Component Category (RCC) for our model.

Figure 2-1 shows the basic organizational structure of the Army Reserve Component. The figure provides a framework for the following discussion.

The USAR **Standby Reserve** consists of individuals who have completed all their military training requirements but not their total military obligation and those screened from a Ready Reserve assignment. Personnel can transfer from the Ready to the Standby Reserve because of a key civilian position or a temporary hardship or disability.

These individuals have no training requirement and are not part of a unit. They may, however, participate in non-unit programs (e.g., Army Correspondence Courses) for retirement credit. These individuals may not be ordered back to active military service or reserve training unless they are drafted in a national emergency declared by Congress.

As Table 2-1 shows, they represent a numerically small portion of the reserve strength, and they do not incur more than a nominal administrative cost. The number of Standby Reservists is decreasing mainly as a result of DoD initiatives that emphasis accession and retention of Ready Reserve personnel.

Retired Reserve individuals have completed at least 20 years of total military service (active and reserve service), but cannot receive retirement benefits until they reach age 60. ARNG/USAR officers and warrant officers who retire after 20 or more years of active federal service are, by statute, members of the Retired Reserve until they complete 30 years of service (including retired service). Also, anyone over age 37 with a minimum of 8 years of service is eligible for transfer into the Retired Reserve.

Members of the Retired Reserve do not train and, like the Standby Reserve, may not be ordered back to active military service except in a national emergency. Until they begin to draw retired pay, their maintenance costs are insignificant, and the Reserve Component model will not account for them. As discussed in Chapter 3, the model will allocate the costs of retired pay to the Ready Reserves on an accrual basis.

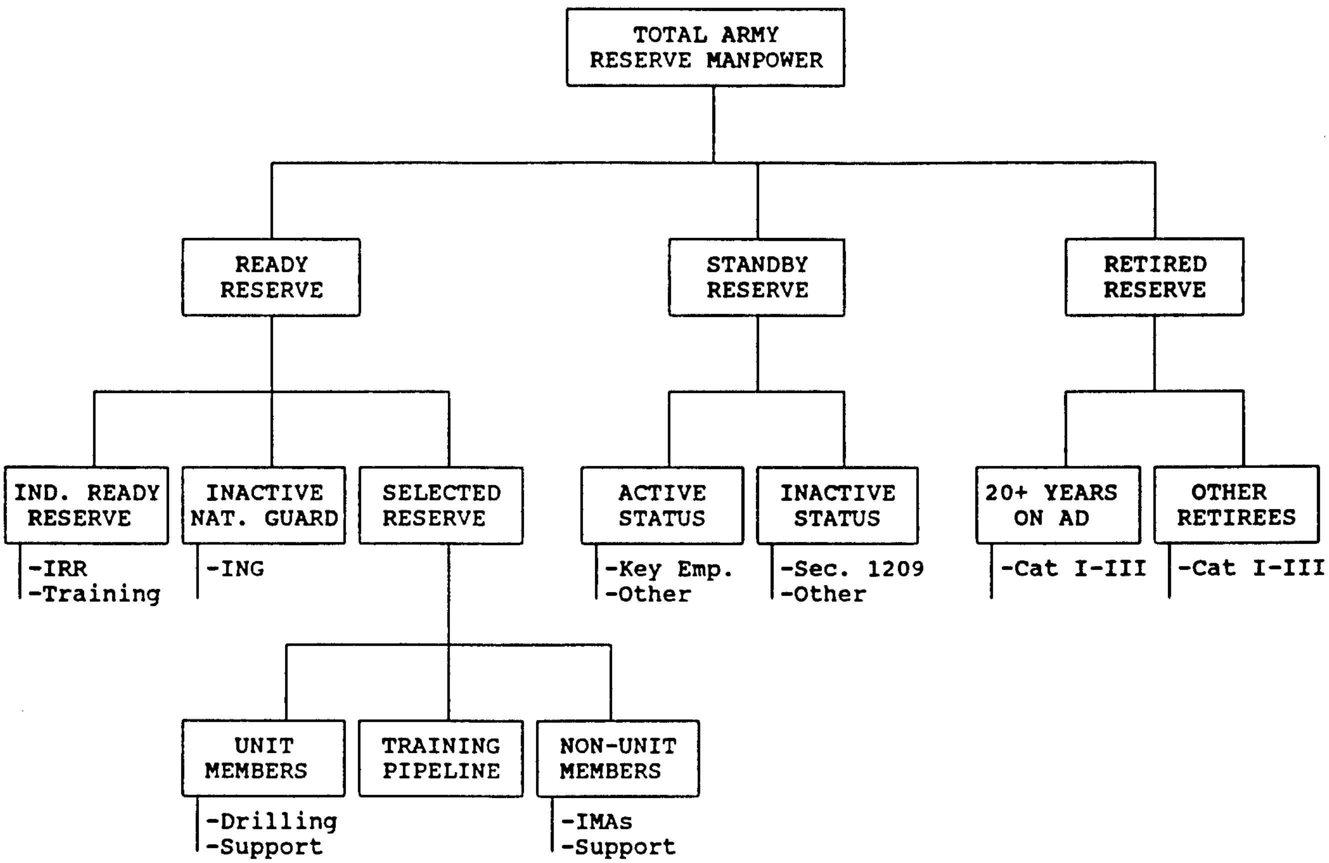

FIGURE 2-1. ORGANIZATION OF THE ARMY RESERVE COMPONENT

TABLE 2-1
ARMY RESERVE STRENGTH

Reserve Forces Category	June 1987 Inventory Officer	Enlisted	Total
READY RESERVE	145,917	919,131	1,065,048
Selected Reserves	100,939	659,932	760,871
U.S. Army Reserve (USAR)	57,072	252,063	309,135
Troop Program Units (TPU)	44,577	192,664	237,241
Active Guard/Reserve (AGR)	3,383	8,919	12,302
Military Technician (MT)	970	2,390	3,360
Simult. Memb. Prog. (SMP)	0	2,961	2,961
Ind. Mob. Augmentee (IMA)	8,142	4,920	12,432
Training Pipeline	0	40,209	40,209
Army National Guard (ARNG)	43,867	407,869	451,736
National Guard Units	32,765	321,297	354,065
Active Guard/Reserve (AGR)	3,908	21,025	24,933
Military Technician (MT)	5,267	18,806	24,073
Simult. Memb. Prog. (SMP)	0	3,114	3,114
Training Pipeline	1,927	43,624	45,551
IRR/ING	44,978	259,199	304,177
Individual Ready Reserve (IRR)	44,091	249,757	293,848
Inactive National Guard (ING)	887	9,442	10,329
STANDBY RESERVE	270	87	35
TOTAL RESERVE (EXCLUDING RETIRED)	146,187	919,218	1,065,405

Source: DMDC - RCS: DD-RA(M)1147/1148 June 1987

Authorized a DoD-wide maximum strength of 2,900,000, the Ready Reserve consists of the Selected Reserve and the Individual Ready Reserve and Inactive National Guard. The Ready Reserve consists of units and individuals that are liable for recall to active duty to augment the active forces in time of war or national emergency. At such time, the President may call to active duty 1,000,000 members of the Ready Reserve (not including members on active duty for training) without their consent for a maximum of 24 consecutive months.

The Selected Reserve is the Most Important Reserve Sub-Category in Wartime Mission and Cost. The Army's Selected Reserve consists of those units and individuals designated by the Army and approved by the Joint Chiefs of Staff as so essential to initial wartime missions that they have priority in terms of personnel, training, equipment, and general readiness over all other reserves. All Selected Reservists are in an active (reserve) status.

Table 2-2 outlines the basic breakdowns within the Reserve Component by Reserve Component Category (RCC), Sub-category, RCC Group, and Training and Retirement Category (TRC). For each of these breakdowns, the table lists the annual requirement in days for inactive and active duty training (IDT and ADT), whether the breakdown exists for the Guard or Reserve, and general remarks.

Selected Reservists fall into three groups -- trained members serving in units, trained members not in units, and untrained members. Reserve units include such diverse organizations as combat, combat support and combat service support units of all types. Within these units are drilling ARNG/USAR members, Military Technicians (MTs), Active Guard/Reserve (AGR), Simultaneous Membership Program (SMP) participants, and Active Component personnel.

Drilling ARNG/USAR. These members usually attend 48 paid training drills, or Unit Training Assemblies (UTAs), each of which is 4 hours long. Most units complete four drills one weekend each month.[5] They must also perform 2 weeks of annual training on active duty status. Some members complete additional active duty training (ADT) to accomplish military training and education.

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[5] The Army Reserve refers to inactive duty training as drill periods, whereas the National Guard generally speak of UTAs or MUTA-4's (Multiple Unit Assemblies -- the four drills in a normal drill weekend). This report uses UTAs and drills interchangeably.

Active Guard/Reserve (AGR). These individuals are Reserve Component members performing active duty in excess of 179 consecutive days, in connection with organizing, administering, recruiting, or training Reserve Component units.

Military Technicians (MTs). These individuals serve as Federal civil service employees during the week and as members of the unit during training assemblies or periods of active military service. They serve as full-time assistants to the commander in discharging the day-to-day administrative, logistic, and training requirements of the units. All of these dual status members must serve in mobilization positions.

Military Technicians have certain unique employment features: (a) they must leave their Federal job if they lose military membership for any reason; (b) they must wear military uniforms while performing their technician duties; (c) they cannot appeal certain actions (e.g., suspension, removal) beyond the State Adjutant General; (d) they do not receive veteran's preference; (e) they receive retention standings in a reduction in force from a technician performance appraisal; and (f) they receive compensatory leave instead of overtime pay.

Simultaneous Membership Program (SMP). These individuals are members of the unit who are working towards a commission in the ROTC program. They continue to serve and draw monthly and annual training reserve pay while they are completing the ROTC program and receiving the $100 monthly subsistence allowance from their ROTC membership.

TABLE 2-2
ARMY RESERVE COMPONENT TRAINING AND RETIREMENT CATEGORIES

RC Category	RC Sub-Category	RCC Group	TRC Group	Annual IDT	Annual ADT	ARNG	USAR	Remarks
Ready Reserve	Selected Reserve	Trained in Units	Members in Units	48 48	14 15	 X	X 	14 days AT excludes travel 15 days AT includes travel
			AGR in Units	N/A	N/A	X	X	(Below MUSARC/STARC); some AGR must attend IDT
			MTs in Units	48	14-15	X	X	Military technician--dual status filling billet
			SMP Members	48	14-15	X	X	Senior ROTC cadets who fill a Selected Reserve billet
		Trained Members Not in Units	IMAs	0-48	12-14		X	IDT by policy; 12-day ADT if not on weekends
			AGR Not in Units	N/A	N/A	X	X	(MUSARC/STARC and above); some AGR must attend IDT
			MTs Not in Units	48	14-15	X	X	Includes ARNG State HQ and maintenance depot personnel
		Training Pipeline	Members on IADT	0	N/A	X	X	Officers and enlisted on split or one-station IADT
			Members Awaiting IADT Pt2	48	N/A	X	X	Members must drill with unit while awaiting initial skill training
			Members Awaiting IADT Pt1	0-48	N/A	X	X	Members must normally enter IADT within 270 days of enlistment

TABLE 2-2
(continued)

RC Category	RC Sub-Category	RCC Group	TRC Group	Annual IDT	Annual ADT	ARNG	USAR	Remarks
Ready Reserve	Selected Reserve	Training Pipeline	Members in Other Training	48	14-15	X	X	Those in other training programs (e.g., chaplains) must complete IDT & ADT
	Individual Ready Reserve and Inactive Natl Guard	IRR	IRR Members*	N/A	1		X	IRR members may train for retirement or promotion
		Ready Reserve Training	Officer Training	0	As Req.		X	Includes chaplain schooling, assignment delays, etc.
			Health Scholar	0	45		X	Health Professional Scholarship Programs
		ING	ING Members	0	1	X		Must meet annual muster w/ unit; cannot train
Standby Reserve	N/A	Standby	Active Status*	0	0		X	May train for points w/o pay and eligible for promotion
			Inactive Status*	0	0		X	May not train and ineligible for promotion
Retired Reserve	N/A	Retired	Many TRC Designations*	N/A	N/A		X	Includes those drawing retired pay, those not drawpay but eligible at age 60, those w/ disability retirement, etc.

* Category subsumes multiple TRC categories.

Individuals in this program fill officer positions within the unit based on existing or projected shortages, to include the 25 percent over-strength officer authorization. The unit may still fill the officer vacancy at any time with a qualified officer and the officer trainee may continue to participate in the program until earning a commission. Officer trainees perform the duties of a second lieutenant and generally receive the pay of an E-5. After receiving a commission, the officer may request reserve status or transfer to the Active Component.

Active Component Personnel. These individuals are active duty members whom the Army assigns to a reserve unit to provide advice, liaison, management, administration, training, or maintenance support. These personnel are not part of the Selected Reserve per se, but most of them would deploy with the unit after mobilization. They receive all of the benefits and compensation of their counterparts with active units.

The Selected Reserve also contains the following personnel not in units: Individual Mobilization Augmentees (IMAs) and Military Technicians and Active Guard/Reserve not in units.

Individual Mobilization Augmentee (IMA). The IMA program identifies reservists to meet active force wartime requirements. IMA positions must require peacetime training. IMA members must perform at least 12 days of annual training, exclusive of travel time.

Some Active Guard and Reserve personnel and Military Technicians do not have a unit affiliation, but they must meet the same requirements as their unit counterparts. Finally, the training pipeline includes personnel who have not completed all of their initial active duty training requirements. The drill requirements of these reservists depend on the portion of the training that they have completed.

The Individual Ready Reserve (IRR) and Inactive National Guard (ING) Compose the Remainder of the Ready Reserve. The IRR/ING contain all of the members of the Army's Ready Reserve not belonging to the Selected Reserves. The IRR contains only Reserve personnel; the ING consist of only National Guardsmen.

Individual Ready Reserve (IRR). The IRR is a manpower pool principally consisting of trained individuals who have served previously in the Active Component or Selected Reserve and have a remaining military obligation. Some individuals without prior military service directly enter the IRR. These individuals must complete initial active duty training and periodic refresher training. The IRR also includes individuals who participate in officer training programs or the Armed Forces Health Scholarship program.

Inactive National Guard (ING). The ING consists of those members in an inactive status who are attached to a specific National Guard unit, but do not participate in training activities. They retain their Federal recognition and would mobilize with their unit, but they receive no pay unless they mobilize. They must, however, meet annually on a "Muster Day" to update their records. ING members receive pay for a four-hour drill on each muster day.

AMCOS Will Model the Army Reserve Component Personnel System

The AMCOS model will estimate the costs of defined manpower requirements. Reservists generate manpower costs as they flow through the personnel system and fill the manpower requirements. Hence, the model must reflect the Reserve Component personnel system to produce robust cost estimates. This section addresses the accession, promotion, and separation of Selected Reservists. An understanding of these issues is essential to constructing a sound life cycle cost model for the Reserve Component.

The Reserve Component Consists of Prior and Non-Prior Service Accessions. Individuals enter Army Guard and Reserve service for many reasons, with the individual units performing most of the recruiting function. The most important distinction among those entering the Reserve Forces is whether they have prior military service. A robust Reserve Component cost model must differentiate between these two groups to some extent.

Those without prior military service are much like active duty recruits. Hence, the model can estimate their costs in a manner similar to that of the Active Component model. Like the Active Component, the Reserve Component offers bonuses to attract high quality enlisted members and commissions officers from several sources, including the ROTC program. Before these recruits can enter Reserve Component units, the Army must spend resources to train them for the duties that they will perform.

Those with prior military service add a significant new element. Prior service members are a proven asset, and they possess valuable skills gained on active duty. In a sense, the Reserve Component reaps the benefits from the training investment of the Active Component. From a Total Force perspective, the Reserve Component mitigates resource leakages from the system. Because of their valuable embedded training, the Reserve Component offers affiliation bonuses to prior service members and targets recruiting efforts towards them.

Among prior service members, the main distinguishing feature is whether they have any remaining military obligation. Those who complete an obligation before joining the Reserve Component must go through a Military Enlistment Processing Station (MEPS) and possibly through basic training again, which generates additional costs. Those who join the Reserve Component with a remaining military obligation (about 80 to 85 percent of those with prior military service) must only meet height, weight, and basic skill compatibility requirements.

The Reserve Component Promotes Members Based on Mandatory Consideration and Unit Vacancies. Reservists earn promotions based on their demonstrated qualifications, ability, and performance and the availability of vacancies in Guard or Reserve units. In addition, reservists receive promotions upon either mandatory consideration or a unit vacancy.

Officer Mandatory Promotions. The Reserve Officer Personnel Act (ROPA) established the promotion requirements for Reserve officers.[6] Table 2-3 lists these requirements for mandatory consideration and for filling a unit vacancy.

TABLE 2-3
PROMOTION REQUIREMENTS FOR ARMY RESERVE OFFICERS

GRADE	MANDATORY CONSIDERATION Years in Grade	MANDATORY CONSIDERATION Years of Service	UNIT VACANCY Years in Grade
W-2	3	-	3
W-3	6	-	6
W-4	6	-	6
O-2	3	-	3
O-3	4	6	2
O-4	7	12	4
O-5	7	17	3
O-6	Announced Annually		

Officers in the ranks of O-1 to O-5 are mandatorily eligible for promotion if they meet total years of service requirements and an Army promotion board recommends them. Promotion consideration accrues to an officer whether assigned to a National Guard unit, a USAR TPU, or an Army Reserve Personnel Center (ARPERCEN) Active Status Control Group in the Individual Ready Reserve. Inactive status members, including those in the ING, are not eligible for promotion.

[6] Although Army Guard officers are in general appointed and promoted by the States, they must meet the ROPA promotion requirements to receive Federal recognition in their pay grade.

If selected by a mandatory DA promotion board, an officer is promoted within a unit only if a vacancy exists at the higher grade. The appropriate commander determines which officer will fill a unit vacancy. If no vacancy exists the officer may decline the promotion for 3 years or accept the promotion, resign the unit appointment, and transfer to another unit with a vacancy or to the IRR.[7] If a vacancy occurs during the declination period, the officer may be promoted within the unit. If one does not, the officer must accept the promotion and reassignment.

A selection board is not required to consider the promotion of a reserve Second Lieutenant or W-1. If qualified, they receive an administrative promotion after three years of active status service.

Officer Unit Vacancy Promotions. Under ROPA all Army Guard and Reserve commissioned officers in units may also be promoted to fill unit vacancies before mandatory consideration, when they complete the time in grade requirements in Table 2-3. To receive such a promotion, the officer must occupy an MTOE/TDA position authorized for an officer of a higher grade. Also, the officer must be best qualified for promotion, recommended for the promotion by his or her commander, and approved by a higher headquarters. In addition, Army Reserve commanders may fill a slot on a unit vacancy basis only after ARPERCEN notifies him or her that no qualified IRR officer is available.

Enlisted Mandatory Promotions. Non-prior service enlisted members automatically receive a promotion to E-2 after 6 months of service following entry on initial active duty for training (IADT). Enlisted members of ranks E-2 to E-4 receive mandatory consideration for promotion, based on the time-in-grade requirements listed in Table 2-4.

Eligible enlisted members of the IRR may be promoted through grade E-7; IRR members can only be promoted to grades E-8 or E-9 in an IMA vacancy. Once again, ING members are not eligible for promotion.

[7] Naturally, those members in the IRR need not transfer to another group within the Reserve Component.

TABLE 2-4
PROMOTION REQUIREMENTS FOR ARMY RESERVE ENLISTED MEMBERS

GRADE	UNIT MEMBERS Months in Grade	Years of Service	IRR Months in Grade
E-3	4	-	4
E-4	9	-	24
E-5	12	-	24
E-6	15	-	36
E-7	21	-	36
E-8	24	15	24
E-9	28	18	28

Enlisted Unit Vacancy Promotions. For grades E-5 and above, promotion is, in general, only allowable if a unit vacancy or an appropriate IMA spot exists.[8] Selection boards promote soldiers who meet the requirements listed in Table 2-4 to grade E-5 to E-9 based on their Enlisted Evaluation Report (EER), in which their superior officers rate their performance; time-in-grade; time-in-service; and education.

Reservists Separate from Service for Many Reasons, Including Retirement. Members leave reserve service upon retirement, expiration of term of service (ETS), transfer to active service, transfer due to civilian employment, and misconduct or unsuitability.

A reservist must meet the following requirements to receive retirement benefits:

- o complete 20 "satisfactory" years of service;
- o spend the last 8 "satisfactory" in the Reserve Component;
- o reach age 60; and
- o not receive military retired pay under other law.

A "satisfactory" year is one in which the reservist earns 50 retirement points for performing three major duties.

First, reservists earn retirement points for inactive duty training. Reservists receive 15 points for each year of Selected Reserve service and 1 point for each drill period, but the total retirement points from membership and drill training is limited to 60 per year.

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[8] However, a merit promotion system allows the National Guard to promote qualified E-4's to E-5 after five years service and E-5's to E-6 after 12 years of service, despite the lack of a unit vacancy in the higher grade.

Second, reservists earn one retirement point for each day of active duty. As stated previously, Army National Guard and Reserve members normally spend 15 and 14 days, respectively, on annual ADT. Reservists can occasionally extend their active duty service, and they receive another retirement point for each additional day of active service.

Finally, reservists can earn retirement points for performing other duties. For example, reservists receive credit for participation in mobilization augmentation programs, military correspondence courses, and military-related conferences and meetings.

The Army Can Fill Reserve Positions in Five Major Ways

The Army Reserve Component personnel system quite naturally affects the inventories of soldiers, but what does it imply about the cost of filling an additional manpower position?

Suppose the Army Reserve needed an additional infantry soldier (MOS 11-B) at grade E-6. If the Army could rent a fully trained soldier from a competitive private-sector firm, the cost to the Army of filling the position for a year would be the rental payment made to the firm. The firm would have to invest resources in recruiting and training the soldier, as well as compensating him.

However, the Army recruits and trains its own soldiers. At each point along the life cycle of the soldier, the Army incurs costs. Some of these costs, such as recruiting and training costs, are essentially investments that benefit the Army over an individual's entire career. How much, if any, of these costs should be attributed to the E-6 position? The conceptual approach usually taken is to average or "amortize" the investments costs over all the future grades that will enjoy the benefits. Although this is a useful approximation in some instances, it unfortunately is not always the best method.

The Reserve Component can fill a given position in one of five ways. They can (1) recruit and train non-prior service members and let them grow into the position; (2) promote members early and access an extra untrained member; (3) retain someone who would otherwise quit; (4) recruit a prior service member with the proper training and experience; and (5) recruit a prior service member who lacks needed training and cross-train him or her for the position.

First, one could "grow" an E-6 by recruiting and training additional people. This method is probably the most popular notion of how the Army fills a position. Because of attrition, it may require 5 recruits to eventually fill the E-6 position. Under this view, most of the people in the inventory are there because the Army is waiting for them to "grow" into something else. Under this view, the cost of the E-6 position is breathtaking, and the Army must recruit for the position years in advance.

A second way of filling the position is to promote an E-5 to E-6 early and an E-4 to an E-5 early and so forth, while recruiting and training one additional soldier.[9] The first year's cost of the new E-6 would be approximately equal to the pay and allowances of the new E-6, plus the costs of recruiting and training the new entrant.

Third, one could retain an E-6 who would have otherwise left the Army, perhaps by offering a slightly higher reenlistment bonus. The first year's costs would be the soldier's pay and allowances plus the cost of the reenlistment bonus.[10] The Army would incur no additional training or recruiting costs.

Fourth, the Reserve Component can attract an individual who left active duty as an E-6. The reserves would incur no additional training costs but might have to pay an affiliation bonus. Similarly, the Selected Reserves could attract an IRR/ING E-6 to fill the position.

Finally, the Reserve Component could access a prior service member who lacks some of the required training. This method resembles the fourth approach, but the Reserve Component would also incur the costs of cross-training the individual before he or she could fill the position.

These examples illustrate that there is more than one way to fill a manpower position and that the cost of that position depends, at least in part, on how it is filled. One of the ways to fill the position will minimize cost, and this may vary with time and circumstance. In addition, the life cycle minimum cost may call for a very different solution than the lowest first-year cost.

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[9] Because of first-year attrition, the Army Reserve Component might have to recruit and train more than one soldier to fill the entry position.

[10] In addition, the Army would incur the cost the higher reenlistment bonus for all those who would have reenlisted for less.

THE RESERVE COMPONENT LIFE CYCLE COST MODEL RAISES CONCEPTUAL ISSUES

This Chapter Analyzes the Major Conceptual Issues Confronting Model Development

This chapter addresses the central issues inherent to the design and development of a life cycle cost model for Army Reserve Forces. Each of the following sections in this chapter raises and discusses a theoretical issue and explains how the AMCOS team proposes to treat it in its model. The resolution of these issues will guide model development.

The Model Will Focus on Trained Selected Reservists in Units

Issue. For whom should the model generate cost estimates?

Discussion. An early step in defining the characteristics of any model is to outline the uses of the model. Put another way, unless you understand why you need cost estimates for the Reserve Component before you calculate them, you are in danger of producing irrelevant estimates for the task at hand.

The primary reasons for computing the life cycle costs of reserve manpower are to assist in making active/reserve tradeoffs, to estimate the reserve portion of the life cycle costs of a particular weapons system, and to assess the cost of a reserve unit configuration. In each of these cases, the AMCOS family of models must be able to estimate the costs associated with manning a trained unit of reserves. Hence, the population of interest is trained members of a USAR Troop Program Unit (TPU) or Army National Guard unit within the Selected Reserves.

AMCOS Solution. To help in these decisions, the model should focus on positions in Reserve Component units manned by trained Selected Reservists. The Selected Reserve is also the only Reserve Component Sub-Category that generates substantial costs.

The proposed Reserve Component cost model also offers sufficient flexibility to capture all significant costs associated with reserve manpower. The major differences among groups of reservists is their drill and annual training requirements. AMCOS will allow users to vary both of these requirements; therefore, the model will generate accurate costs for all reservists. This capability will allow users to estimate the costs of IMA members, for example, whose per drill costs resemble those of reservists in units, but whose drill requirements can vary substantially.

In some cases, analysts must use the other communities in the AMCOS family of models to estimate the reserve manpower costs. For example, AMCOS will cover the costs of Active Guard and Reserve (AGR) members in the Active Component model. Similarly, AMCOS will estimate the civilian wages of military technicians in the Civilian Component model (under development) and the reserve costs in the Reserve Component model.

The largest group that AMCOS does not explicitly cover is the Individual Ready Reserve (IRR) and Inactive National Guard (ING). However, the costs of these members are generally negligible. By definition, Standby Reservists generate only administrative costs. Similarly, Retired Reservists generate no significant costs until they receive annuity payments. These cost are, in a sense, sunk costs, and the Reserve Component model will cover them in the same manner as the Active Component model -- as accrual payments while on active duty and in the Selected Reserves.

As in the active model, the Reserve Component model will amortize the pay and allowances and other costs of individual training to Selected Reservists. Those in the training pipeline cannot fill manpower positions, so the model should not account for these members separately. Although not technically in the training pipeline, SMP participants act as officer-trainees, and the model will treat their costs as officer acquisition.

The Model Will Not Address All Resource Allocation Issues

Issue. Can AMCOS definitively answer every resource allocation issue?

Discussion. The basic framework for resource allocation decisions should be a cost-benefit analysis. This approach compares the relative costs (or savings) of each option with its associated benefit or productivity. In this framework, the costs are those associated with peacetime operation, and the productivity considerations are readiness and ability to mobilize during wartime.

AMCOS Solution. As stated, the Reserve Component life cycle cost model will aid policy makers balancing the skill and grade structure within a reserve unit or deciding whether to staff a unit with active or reserve manpower. AMCOS **cannot** answer all of the questions involved in these allocation decisions. AMCOS will provide the peacetime costs, but the benefits must be estimated elsewhere.

A central issue in any active/reserve substitution question is whether national security allows a function to be maintained part-time. Functions that by definition demand full-time operation (e.g., early-warning stations) or those that would be deployed first in an emergency might not be manned with reservists, even with substantial cost savings. The important point is that cost savings alone do not warrant substitution of reservists for active personnel. It is also necessary to consider the productivity tradeoffs between active and reserve manpower in terms of overall readiness and mobilization.

For example, the Army is has on occasion considered bringing combat units from Germany to the United States, whereupon the National Guard or Army Reserve would assume its mission.[11] This shifting of resources should save the Army manpower dollars. The AMCOS family of models will contain the costs of reserve and active manpower and be able to generate sound estimates of the cost savings. The model could not address, however, the loss of readiness and productivity associated with manning the division part-time and locating it on this side of the Atlantic Ocean.

This limitation applies equally to other uses of the model. For example, the Army could consider changing the configurations of some of its reserve units, adding some MOS's and deleting some others. An analyst could use this model to estimate the costs associated with different unit configurations, but the model would not shed any light on the change in productivity corresponding to the change in skills.

Another limitation to the model is that it is only a **manpower** cost model. Resource allocations that generate fewer manpower costs may not necessarily have the lowest overall cost. For instance, the AMCOS model might indicate that the Army could save manpower dollars by consolidating two bases, but it could not incorporate the fixed costs of opening and closing a base that are associated with that action.

The Model Will Estimate Annual Costs for a Part-Time Position

Issue. When defining a manpower requirement (and thus generating a manpower cost), should the basic unit be a drill, day, month, year, or the duration of the position?

Discussion. The AMCOS team must also define the unit of requirements input. In the active model, the answer was more clear and the distinction less important. Active duty members serve full-time, and so the answers generated would simply be multiples of each other. The AMCOS Active Component model generates annual costs mainly to correspond with the budget process.

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[11] See the December 7, 1987 edition of the Army Times.

The nature of the reservist complicates this question greatly. Most reservists serve only part-time duty. How then can the model yield results that compare with active duty cost estimates? In addition, Selected Reservists generate drill costs (monthly), active duty training costs (annually), and some periodic and one-time costs. The "correct" time horizon is a foggy notion because of the timing of reserve manpower costs.

For consistency with the Active Component model, the Reserve Component model should compute annual costs, if feasible. This corresponds with the training requirements for Reserve duty, which state the number of drill periods and days of annual training per year.

AMCOS Solution. The AMCOS model assumes that the normal function of Selected Reserve units is to meet emergency military manpower requirements. To do this, reserve units perform drill and annual training. Hence, the model will generate three basic kinds of costs associated with Reserve Component manpower -- those that vary with IDT, those that vary with ADT, and those that are independent of both IDT and ADT -- and sum them to get the annual cost of the reserve position.

The independent (fixed) costs are those the Reserve Component incurs regardless of the how often a unit drills or trains in a year. These costs include bonuses, recruiting, individual training, and other periodic or one-time costs that occur during a reservist's career. The model will amortize these costs on an annual basis, although it could just as easily spread them over another period.

The UTA costs are those variable manpower costs that depend directly on the number of unit drills per year -- primarily the basic pay that members receive while on IDT. The model will multiply the cost for each UTA by the number of UTAs performed in a year, which the user supplies.

The ADT costs are those variable manpower costs that depend directly on the number of days the unit spends on annual training per year. These consist of the pay and allowances that members receive while on ADT and benefits that reservists receive while on active duty. The model will multiply the cost for each day of active duty training by the number of days performed in a year, which the user can vary.

The Active Component model calculated the cost of a manyear, or the costs associated with filling a position full-time for a year. Computing the cost of full-time reserve position is, in general, pointless. The nature of the reserves calls for part-time duty. Hence, the model defines requirements and costs not in manyears, but in "position-years", where the user supplies the drill and training requirements of a given position. The model will use a default of 48 drills and 14 (Reserve) or 15 (National Guard) days of annual training per year.

On a final note, the model will estimate costs for a year of reserve duty. If the President calls the Selected Reserve unit to active duty, the unit cost estimates would naturally differ substantially. The model will not account for the probability of a call to active duty. In this case, interested users should use the AMCOS active duty model.

The Model Will Distinguish Costs Along Several Dimensions

Issue. What cost dimensions are relevant for a Reserve Component life cycle cost model?

Discussion. The Active Component model consisted of two basic models -- officer and enlisted -- and distinguished costs by grade/MOS cells and maintained costs by major appropriation. In addition, the model computed an average and a marginal cost for each cost element.[12]

Finally, the Active Component model accounted for cell-specific variations in the proportion of high and low quality recruits for the recruiting and retired pay accrual cost elements. This distinction allowed analysis of the net cost to the Army of high quality recruits, who are more costly to obtain but are more likely to achieve success than are low quality recruits.

The significant presence of prior service accessions in the Reserve Component adds complexity. Averaging over these two groups could lead to incorrect cost estimates if the proportions changes. For example, rapid expansion of reserve strength could result in an increasing proportion of non-prior service reservists, all of whom would require training, and thus generate more training costs, than members with prior military service.

AMCOS Solution. The Reserve Component model will make the same distinctions as the Active Component model, but it will also make separate estimates for prior and non-prior service accessions. The team will model many of the cost modules differently for the two groups. AMCOS will be able to address questions on the implications of changing the mix of prior and non-prior service members. Users will be able to set the percentage of prior service personnel at the beginning of a cost

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[12] The average manpower cost is simply the per capita cost. The marginal cost of a manpower slot is the actual cost of acquiring that additional position. Marginal costs should guide resource allocation decisions because they measure the change in costs resulting from that decision.

estimation, and the model will automatically adjust the costs for each of the modules.

The program will not, however, explicitly vary costs between Army Guard and Reserve members. The costs for these two groups are generally identical, but the model will make three distinctions. First, the model will use different default annual training requirements (14 and 15 days per year for Guard and Reserve members, respectively). Second, the model will account for National Guardsmen's State pay and benefits, although the model will suppress this option as a default. Finally, the appropriations will naturally differ between these two groups. Users will have to enter whether the cost estimation is for a Guard or Reserve unit, but the minor distinctions will not require separate cost categories.[13]

In addition, the model will make no explicit unit distinctions, although enlistment and reenlistment bonuses vary among Reserve Component units. Unfortunately, the bonuses vary too frequently to be set in a data base. Users will be able to set the current bonuses for a given unit directly in the model or use the average enlistment bonus.

The Active and Reserve Components Subsidize Each Other

Issue. How should the model account for movement between the Active and Reserve Component personnel systems?

Discussion. The Active Component model assumes that the personnel system is a "closed" system. In fact, the system is generally closed at the entry point but not at departure. The reserve forces attract many active duty personnel who choose not to complete their career on active duty but want to retain a military affiliation. Soldiers who leave active duty and enter the Guard or Reserve are still linked with the active personnel system by the dollars invested in them and the benefits that accrue from total military service.

Each component invests resources training and recruiting individuals in exchange for a period of obligated service. Many individuals transfer between the Active and Reserve Components during their career, and the gaining component does not generally have to reinvest recruiting and training. In essence, the Reserve

[13] Technically, the policy modules will not differ between the two groups, but the cost estimating model will make minor changes depending on whether the estimation is for a Guard or Reserve unit. See Chapter 4 for a more detailed discussion of the policy modules and cost estimating model.

and Active Components subsidize each other, because of individual movement between the components.[14]

This point raises the question of whether we should model individual movement through the personnel systems of the Active and Reserve Components. For example, should we amortize training costs over the entire expected military career (active and reserve) for prior service accessions? Naturally, these questions assume greater importance in active/reserve substitution decisions.

Two major considerations must decide the answer -- the correctness and practicality of the solution. It appears that modeling the entire military career of a soldier (from recruit to active duty to the reserves and perhaps back again) is not practical and may not be the best way to view the situation.

Allocating costs over both the active and reserve career of a soldier ignores the purpose of the investment. The Army trains soldiers to perform their mission. Training makes members more valuable to civilian employers or the reserve forces, but their value to others is not of primary relevance to the investment decision.[15]

Distributing costs over the entire military career is probably impractical as well. There is often considerable movement between the active and reserve components. As a result, calculating continuation rates over both components is an overwhelming task. At this point, deriving the required overall continuation rates would require too much time and analysis. If we want to investigate this issue further, we should wait until we have a good, working model.

Furthermore, the Army presumable receives a greater return on its training investment for each year of active service compared to an additional year of reserve service. There is, however, no obvious way to weigh the relative values of a manyear of active and reserve service in this context.

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[14] It is also possible that allowing prior service reservists to retain some of the value of the retirement system induces some who would otherwise remain on active duty to join the Reserve Component. This effect is undoubtably small, however, because of the relative value of the two retirement plans.

[15] The value of the training is important in that the Army may require longer terms of obligated service for some training.

AMCOS Solution. As a default, the Reserve Component model will estimate the costs to the Army Guard and Reserve. In the example of training costs, the default case would be the costs that the Reserve Forces must incur on average to train individuals, ignoring the sunk training costs incurred by the active force for prior service personnel. Hence, we would include only the training costs actually incurred while on reserve status. If we use the average distribution of prior and non-prior service members, then this estimate would represent the average cost of training.

The marginal cost would then be equal to the training costs associated with the mix of prior and non-prior service members at the margin. Assuming that the Reserve Component accesses all those with prior service that it can, additional soldiers will have no prior military service, and so the Reserve Component must finance all training costs.

Users could set the percentage of those with prior service to zero at the beginning of a cost estimation, and the model would use this marginal cost framework on all the relevant modules. Conversely, if users were interested in the actual Army Reserve Component outlays, then they could input the current (default) distribution.

The marginal/average cost distinction is a straightforward solution that also allows flexibility. For example, even if it is methodologically correct to allocate costs over the entire military career, this approach bounds the correct cost estimates.

National Guardsmen Serve State Duty and Receive State Benefits

Issue. How should the model treat the pay and benefits that National Guardsmen receive for State duty?

Discussion. National Guardsmen have additional responsibilities and receive additional benefits compared to USAR members. For this reason, Guardsmen typically generate more costs and serve more time than their USAR counterparts.

Guardsmen can be called to State active duty by the Governor who controls the Guard unit. Guardsmen are typically called out to confront natural disasters, such as floods or forest fires. They can also be called under unusual circumstances of unrest, such as the recent prison hostage crises in Louisiana and Florida. When a Guardsman serves State active duty, he is paid at the same military rate, although some States ensure that members receive a minimum amount that may be greater than military pay.

In addition, certain States offer substantial benefits to compensate members for the extra duty that they serve. For example, the State of Alaska pays Guardsmen a minimum of $65 for each day of State duty (approximately the pay of an E-7 at YOS 18 or an O-2 at YOS 3), provides up to $750 per year in educational benefits, offers bonuses of $3,000 for a 6-year reenlistment, and provides additional retirement benefits.

AMCOS Solution. The model's primary focus is the cost to the Army and the Federal Government of manning a unit. The State duty that a Guardsman serves is in addition to his standard IDT (drill) and ADT (annual training) obligations.[16] The pay that a Guardsman receives while on State active duty and the extra benefits are not the primary focus of the model, but the model will allow limited analysis of it as an option.

The model will ask users who are estimating the costs of a National Guard unit how many days of State active duty the unit will serve on average. The model will then generate the costs of State pay and allowances and account for them separately. In addition, the model will present users with a listing of the benefits that each State provides and allow them the opportunity to set the cost of the benefits.

<u>Reserve Forces Personnel May Fall in Different Tax Brackets from Active Duty Personnel</u>

Issue. Should the model consider tax differences between Active and Reserve Component personnel?

Discussion. Estimating Selected Reserve costs in a life cycle framework should involve the **net** cost to the Government. Hence, salaries (paid by the Government) should be adjusted for income tax (received by the Government). Although the tax adjustment makes no difference in costs to the Army, the model should be able to estimate total Government expenditures. Furthermore, given the current Government debt, some users might be interested in computing Army manpower's net contribution to, or reduction of, the Federal debt.

Presumably, many reservists are not on active duty because they can receive higher wages in the private sector. Hence, the wages paid to reservists will be taxed at a higher rate, and thus

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[16] It may imply that he is more productive than his Army Reserve counterpart, but this is a productivity, not a cost, issue.

of less relative cost to the Government, than active duty wages.[17]

For example, consider the net cost of basic pay and allowances for an E-7 with 18 years of service. On active duty the individual would receive annual basic pay of $20,168 and $4,742 in BAQ (assuming he had dependents and lived off base). For a year of Reserve service, including 48 drill periods and two weeks of annual training, he would receive $3,473 in basic pay.

In tax years 1988, there will essentially be two tax brackets: income up to $29,750 is taxed at 15 percent and income above that amount is taxed at 28 percent. If the individual worked in the private sector making $30,000 (approximately $5,000 or 20 percent more than in the military), then all reserve income would be taxed at 28 percent. Conversely, all $20,168 of his active duty counterpart's taxable military income would be taxed at 15 percent. The Government essentially saves $451 by paying $3,473 to an individual who is taxed at 28 rather than 15 percent.

The magnitude of the tax effect will naturally differ according to the specifics of the situation. The tax difference is less if not all of the pay and allowances fall under a different tax bracket, as they did in the above example. The difference will also depend on the total amount of military pay and allowances.

It is clear that these costs are not applicable to most users of the model -- the cost is the same to the Army regardless of the tax rate. However, these costs are most relevant to the life cycle model.

This simple example may, however, mask some important variables. For example, reservists may be more likely to own homes because they do not move around as much as their active duty counterparts. If this were so, then the interest deductions may imply that the average tax rate on reserve pay is lower than for active duty personnel.

AMCOS Solution. Because the costs are relatively small and the assumptions necessary to model the tax system relatively strong, the AMCOS team proposes not to address these costs in the model.[18]

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[17] Conversely, because there is a $43,800 cap on income that is taxable for FICA, reservists may pay relatively less FICA taxes than their active-duty counterparts.

[18] The team could include a simple model of the tax system and see how relevant the costs are. This simple model could include averages over the entire reserve component for income, marital-dependent status, spouse income, and home ownership. The

The Model Will Distinguish Individual from Unit Training

Issue. How should the model account for a reservist's pay and allowances while on drill or annual training?

Discussion. The Reserve Component model may be used in conjunction with the Active Component model. Therefore, the two models should account for costs consistently. Even if the total costs are correct, AMCOS must generate cost categories that are consistent between the two models.

Though these drill and annual training periods are a form of training, are they training in the sense established in the AMCOS active duty model? The Active Component life cycle cost model distinguishes unit from individual training. The model considers unit training as a normal part of an individual's job. The model includes the cost of the member's pay and allowances while on unit training, but it does not include any of the other associated costs (e.g., travel, facilities).

AMCOS Solution. The Active Component model does capture all of the costs of individual training, including pay and allowance, travel, ammunition, etc., in the category of training costs. The Reserve Component model will similarly include in the training category the costs of initial active duty training (IADT) and "schoolhouse" training that the reservist receives during his or her career.

In addition, because IDT and ADT periods are annual requirements, the model should count the pay and allowance costs for these periods as the normal military compensation for a reservist. These correspond to the normal duties of an active duty soldier, and this treatment is consistent with the active duty model.

Some Benefits Are at No Cost to the Reserve Component

Issue. Do all benefits generate additional costs?

Discussion. A life cycle model attempts to measure the cost of additional manpower positions. The cost associated with a cost element should not be confused with the value it provides. For example, the Active Component model assumes that the Army staffs its medical force based on wartime requirements, and so the staff

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1985 DoD Survey of Active Personnel and the 1986 DoD Survey of Reserves Personnel could provide the necessary information for these two communities.

size is independent of the active duty force structure. Hence, the Army incurs no additional cost (in term's of doctors' pay) by offering active soldiers medical care.

AMCOS Solution. Similarly, the Reserve Component model will set the costs of some of the benefits that reservists receive while on active duty to zero. For example, each base's Morale, Welfare, and Recreation (MWR) facilities depend on the size of the active force, and reservists can use them only during off-peak hours. Hence, the marginal cost of each reservist to the MWR program is essentially zero.

THE PROPOSED ARMY GUARD AND RESERVE LIFE CYCLE COST MODEL RESEMBLES THE ACTIVE COMPONENT MODEL

This Chapter Outlines the Basic Design of the Reserve Component Life Cycle Cost Model

The preceding chapters provide vital background information and describe the conceptual issues confronting a life cycle model of Army Reserve Component manpower. This chapter presents the AMCOS team's conceptual approach to life cycle cost modeling for reserve manpower, drawing on the previous chapters. It discusses the basic design of the model and selected technical issues.

To implement its design approach, the AMCOS team will initially build good working models and then improve on them, rather than attempting to build perfect models all at once. This modeling technique successfully guided the development of the Active Component life cycle cost model. The design presented next is especially well suited to this strategy. It is modular so the team can improve particular elements without redesigning the entire model. The first Reserve Component enlisted and officer models will be operational by June 30, 1988.

The Model Design Emphasizes Flexibility and Minimizes Risks

The model's basic framework parallels that of the Active and proposed Civilian Component models. Hence, the approach benefits from our past research, minimizes design risks, and ensures that the resulting models will be fully compatible. Figure 4-1 displays the basic model design.

The logic of the model is quite simple. The program stores all of the fixed data required for manpower cost estimates in the underlying data base. The data are used largely, but not exclusively, by the policy modules. The policy modules are sets of equations that simulate Army personnel policies to generate manpower costs. The modules convert the underlying data into cost flows, computing both average and marginal costs, where relevant. Currently, the proposed model contains policy modules for 11 major manpower cost elements, but this may change as the model evolves.

The program will then deposit the manpower cost flows into the "structured cost" data base. As discussed in Chapter 3, the cost flows vary along the following dimensions:

- o officer/enlisted,
- o MOS,
- o pay grade,
- o high/low quality non-prior service/prior service,
- o average/marginal cost, and
- o major appropriation.

FIGURE 4-1. AMCOS RESERVE COMPONENT SCHEMATIC DIAGRAM

The structured cost data base defines the flow of costs an individual soldier will generate as he moves through each pay grade. All transformations to the basic data in the policy analysis modules attempt to estimate these cost flows.

o officer/enlisted,
o MOS,
o pay grade,
o high/low quality non-prior service/prior service,
o average/marginal cost, and
o major appropriation.

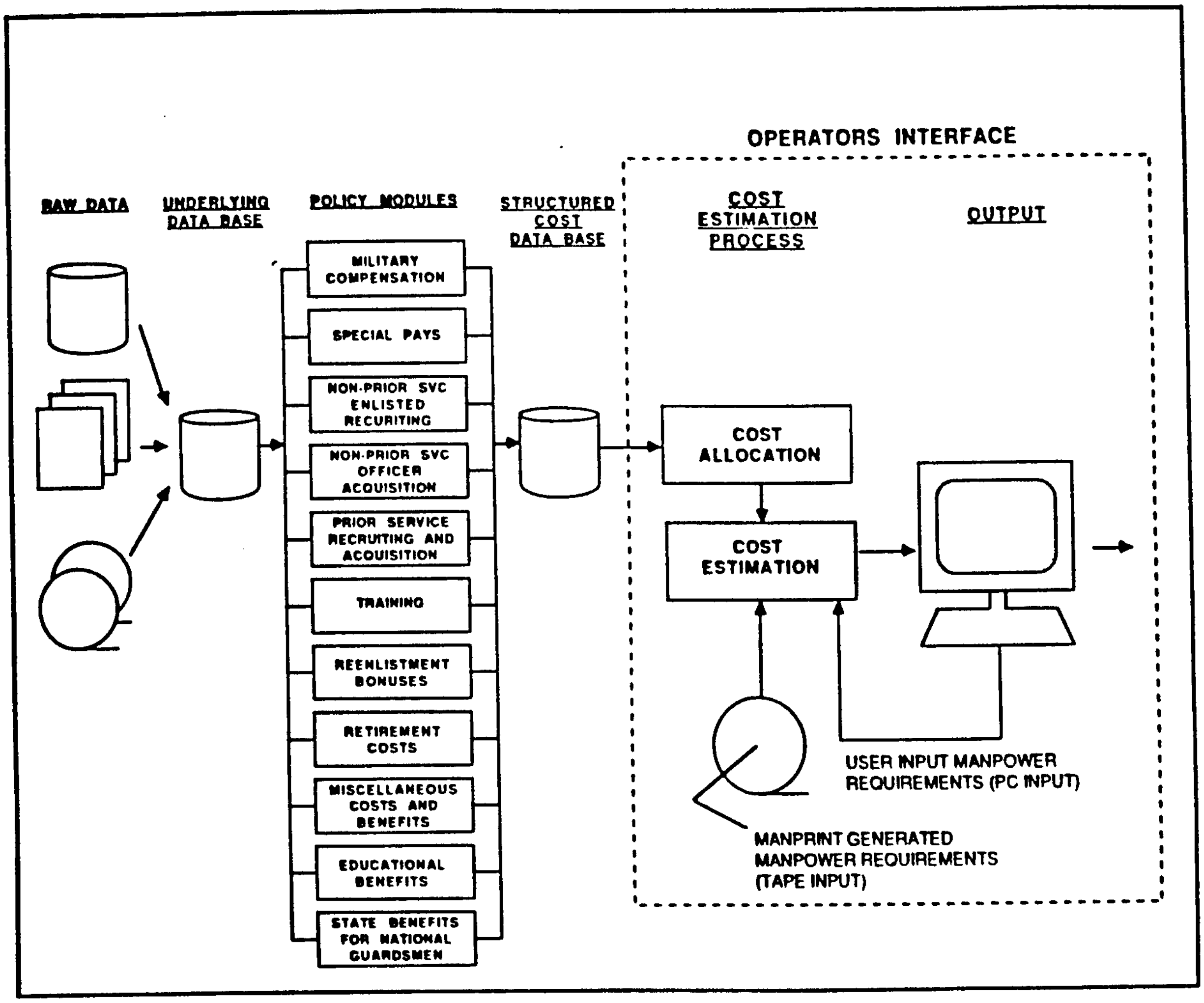

FIGURE 4-1. AMCOS RESERVE COMPONENT SCHEMATIC DIAGRAM

The structured cost data base defines the flow of costs an individual soldier will generate as he moves through each pay grade. All transformations to the basic data in the policy analysis modules attempt to estimate these cost flows.

The cost estimating model averages or amortizes certain investment costs, such as recruiting and training, to convert the outlays into a matrix of manpower costs, or prices, by grade and MOS. Then, the model multiplies these prices by the required manpower quantities, which users specify, to estimate the time-phased cost of requirements.

The Underlying Data Base Contains All of the Fixed Model Data

The underlying data base will contain all the model's data, except for items supplied directly by users for a particular application. The underlying data will vary across the dimensions of the structured cost data base (e.g., MOS, grade, etc.) to the extent possible.

The Defense Manpower Data Center (DMDC) maintains the Reserve Component Common Personnel Data System (RCCPDS), which contains personnel and pay data for all Selected Reservists. From this file, the AMCOS team can determine the basic inventory by grade, MOS, quality, and prior service status. The model will also draw cost data from the Reserve Component Budget Justification Books, military pay and allowance tables, and Reserve Component bonus data. Finally, the model can draw data that is common across component, such as the cost of certain training programs, from the Active Component model.

As in the Active Component model, a Data Information Resources Dictionary (DIRD) will describe each data element, its source, and the period to which it applies. In addition, the AMCOS team is currently developing utility programs for modifying and updating the data base.

The Policy Modules Reflect Reserve Component Personnel Policies

The policy modules are sets of equations that generate both average and marginal cost flows for 11 major cost elements. They attempt, in a sense, to model Army personnel policies, producing the costs that result from the policies.

When policies change, the cost flows will change. The policy modules project the cost effects of these changes. Where possible, they take prices as given and estimate relevant quantities based on personnel policies, rather than allocating historical budgets. A model based solely on historical data and fixed allocation factors will tend to unravel when policies change.[19] Modeling the personnel policies themselves should prevent this unraveling.

The current AMCOS design includes the following major cost elements:

- o Military Compensation (Basic Pay and Allowances);
- o Special Pays;
- o Non-Prior Service Enlisted Recruiting;
- o Non-Prior Service Officer Acquisition;
- o Prior-Service Recruiting and Acquisition;
- o Training;
- o Reenlistment Bonuses;
- o Retirement Costs;
- o Miscellaneous Costs and Benefits;
- o Educational Benefits; and
- o State Benefits for National Guardsmen.

Additional cost components underlie each of these major elements. For example, the non-prior service enlisted recruiting module calculates the cost of enlistment bonuses, recruiters, advertising, and accession travel.

At present, most of the policy equations are quite simple. In accordance with its development strategy, the AMCOS team will introduce simple equations, build a working model, and add complexity later if needed. This approach avoids investing time in refining the equations before obtaining a working model, which is a risky, inefficient strategy.

<u>Military Compensation Includes the Pay and Allowances for Drill and Active Duty Training</u>. This module accounts for pay and allowances for inactive duty training (IDT or drill) and annual active duty training (ADT or AT).[20]

Most Selected Reservists must perform 48 four-hour drills each year, and most units drill four times during one weekend every month. In general, National Guard members perform 15 days of active duty training per year (including

[19] See our discussion of this problem in Technical Report: Evaluation of the Prototype, July 1986.

[20] Chapter 3 contains a discussion of why the pay and allowances are included in this module and not calculated as a training cost.

travel time), and Army Reserve members spend 14 days on ADT per year (excluding travel time).[21]

The military pay and allowance tables drive the cost of military compensation for both the Active and Reserve Components. AMCOS will link the individual models, so users can update this module in both models by entering the tables only once.

Basic Pay. Military basic pay is a function of only grade and years of service.[22] Reservists receive one day's active duty basic pay (or, more exactly, 1/360th of annual pay) for each drill or each day of annual training.[23] Hence, most Selected Reservists receive basic pay for approximately 62 days, or roughly 17 percent of the annual basic pay of an active member of the same grade and years of service.

The model will calculate the cost of basic pay for a given grade/MOS cell as a weighted average of the pay for each YOS group in the cell. Hence, the YOS distribution within grade/MOS cells provides variation in the cost of basic pay. In addition, users will be able to specify any specific YOS count for any cell. This pay table look up procedure, as opposed to using a snapshot of the Joint Uniformed Member Pay System (JUMPS) file, will allow users to update the pay tables directly so that the model will immediately reflect manpower cost changes.

The policy module will transform the basic pay table into a cost per drill and a cost per day of annual training. Users will enter the annual IDT and AT requirements of the manpower slot in the cost estimating model, which is independent of the policy module. As a default, the model will estimate the cost of basic pay for a reservist who attends 48 drill periods and 14 (Reserve) or 15 (National Guard) days of annual training.

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[21] Table 2-2 outlines the IDT and ADT requirements for reservists

[22] In this report and in reserve policies, years of service (YOS) implies total military service, including active and creditable reserve time.

[23] As a result, on a normal drill weekend (MUTA-4), reservists receive four days' pay for two days' work, in comparison with active duty members.

Basic Allowances. Reservists are eligible for Basic Allowances for Quarters (BAQ) and Subsistence (BAS) while on active duty for training.[24] The model will base allowance costs on the days of annual active duty training that users specify in the cost estimating model.

All members receive some BAQ while on ADT, with the amount varying by grade, whether the member occupies Government housing, and whether the member has dependents. Individuals with dependents always receive the full BAQ payment. Those without dependents receive their full BAQ entitlement if they do not reside in quarters during annual training and a partial payment if they do. The model will compute average BAQ for a given grade/MOS cell as the weighted average of the BAQ rates for soldiers within that cell. The model assumes that the cost of providing quarters is essentially zero, because the quarters are usually unfilled active duty quarters.

BAS compensates soldiers who do not eat in government messes. Officers receive a flat rate based on the number of days of annual training. Enlisted members who do not eat in the messes, however, receive BAS on a daily basis, with the rate depending on the availability and conditions of government messes. The model assumes that the average cost to the government of providing rations to reservists is equal to the BAS rate. The module will calculate the cost of BAS as a weighted average using a JUMPS extract of all who receive BAS.

Costs Not Included. The Reserve Component life cycle cost model does not consider some costs related to drill and active duty training. Specifically, the model does not include the inherent tax advantage on allowances, the Social Security eligibility advantage, or the cost of IDT and ADT other than pay and allowances and some miscellaneous expenses. The following discussion addresses these issues.

Because BAS and BAQ are not taxed, members who receive allowances can gain an implicit advantage in taxes. Although not an explicit cost to the government, it represents a cost in the life cycle framework. The DoD actuary calculates the expected advantage from allowance payments for active duty personnel and includes it in her estimate of Regular Military Calculation (RMC). Unfortunately, she does not calculate the

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[24] Reservists are only eligible for a Variable Housing Allowance (VHA) if they are on active duty for at least 140 days.

advantage for reservists. Because allowance payments are usually small, the cost of the tax advantage is generally negligible.

Reservists accrue one quarter of creditable employment for Social Security benefits for each two-week period of annual training. Hence, some reservists may qualify for Social Security benefits that they otherwise would not have received, or they may qualify for them earlier. The model ignores these costs because they are probably quite small and because they depend too heavily on the type of civilian employment, for which data is not available.

The Army incurs costs other than pay and allowance costs during drill or annual training. The model does not account for these costs (e.g., ammunition, facilities, and travel to annual training spot), because they are a unit training expenditure.[25] As discussed in Chapter 3, the Active Component models do not include similar costs, so the models are compatible.

<u>Reservists Can Receive Special Pays while on Active Duty</u>. This cost element includes special pays, such as pays to people performing aviation or hazardous duty. Members who are entitled to special duty pay can receive them only when on active duty (e.g., for training), and they receive such pay at 1/30th of the monthly rate for active duty members for each day of active service.

Doctors and dentists are eligible for special and incentive pays of at least $50 for a two-week period of ADT, with the amount increasing with years of service. In addition, officers in certain MOS's are eligible for air weapons controller special incentive pay, diving duty pay, and foreign language proficiency pay. Enlisted personnel are eligible for diving pay, other hazardous duty incentive pay (parachute jumping, demolitions duty, etc.), foreign language proficiency pay, and special duty assignment pay (for special proficiency in a shortage skill). Reserve Component officers and enlisted personnel can both receive flight pay.

The average cost of special pays will be set equal to the marginal cost. However, the user will be able to zero out special pays and other costs for which he knows the actual marginal rather than the average variable cost. For example, if the user is contemplating the addition of an

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[25] The Miscellaneous Costs module includes the cost of FICA expenses, uniform allowances, and individual transportation.

airborne position, he or she will be able to specify actual jump pay in the model.

<u>The Reserve Component Generates Costs Recruiting Non-Prior Service Enlisted Personnel</u>. This module includes the costs of (1) bonuses to attract non-prior service enlisted recruits, (2) the Guard and Reserve share of advertising and related costs, (3) the cost of recruiters' time, and (4) other processing costs (examining, accession travel, USAREC operating costs).

The National Guard Personnel, Army and Reserve Personnel, Army (NGPA/RPA) and Operations and Maintenance, Army National Guard and Operations and Maintenance, Army Reserve (OMARNG/OMAR) appropriations share the costs of enlisted recruiting. The personnel accounts include the cost of accession travel, recruiters' time, and enlistment bonuses. The operation and maintenance accounts fund the cost of USAREC operations, advertising, and examining.

The model will assign costs based on the distribution of high and low quality recruits. High quality recruits (high school graduates who score in AFQT categories I-III) contribute to all four costs of non-prior service enlisted recruiting. Low quality recruits are ineligible for bonuses, and the model assumes that the Army Reserve Component spends money on advertising to attract only high quality recruits. Hence, low quality recruits only generate the cost of recruiters' time and other processing costs.

Non-prior service recruiting costs will vary by MOS for two reasons. First, targeted recruiting incentives, such as enlistment bonuses, vary by MOS.[26] Second, each MOS has a different mix of high and low quality recruits.

Bonuses. The Army Guard and Reserve offer enlistment bonuses for high quality, non-prior service recruits.[27] As of June 30, 1985, reservists were made ineligible for educational assistance bonuses (or "kickers"), so the model does not account for these costs. Reservists are eligible, however, for educational benefits under the G.I. Bill; these are discussed later in this chapter.

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[26] Bonuses also vary by unit, which users can specify when estimating costs.

[27] Those enlisting solely to apply for a civilian position requiring of reserve status (e.g., military technician) are not eligible for an enlistment bonus.

To receive a bonus, an individual must enlist for 8 years in the Ready Reserves, at least 6 of which must be in the Selected Reserves. Currently, bonuses are authorized for $2,000 for critical skills and $1,500 for certain units. A reservist who is eligible for both enlistment bonuses receives only the larger ($2,000). The member receives one-half of the bonus on completion of IADT and the remainder in equal installments on completion of the second and fourth years of the enlistment term.

Advertising. The model assumes that advertising is intended solely to obtain high quality non-prior service recruits. Therefore, the model will allocate the total Army Guard and Reserve advertising costs on a constant, per capita basis for high quality recruits.[28]

Recruiters' Time. The model must allocate recruiters' time between high and low quality recruits. It assumes a constant processing time per recruit and a limited queue of recruits. Furthermore, the model assumes that the marginal (and average) cost for each low quality recruit is the processing cost, but that the Army exhausts the queue for high quality recruits, so the marginal cost exceeds the processing cost.

The average time cost per high quality recruit is the sum of the marginal costs for each recruit divided by the number of recruits. The model assumes that half of the recruits are in queue and that marginal cost rises linearly above the processing cost. In addition, research suggests that a high quality recruit takes 6 times longer to recruit and process than a low quality recruit, at the margin.[29] Hence, the first half of recruits require only the constant processing time, and the second half takes 3 1/2 times as long on average. Thus, the average time to enlist a high quality recruit is 2 1/4 times the processing cost.

If the Army were close to an optimal allocation of recruiters, the model can use the number of high and low

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[28] The model will not be able to assess the recruiting benefits that the Reserve Component accrues from active duty advertising. It will apportion only the Reserve Component advertising budget.

[29] Daula and Smith (1985) estimate this trade-off to be 8 to 1, at the margin, while Dertouzos (1985) estimates this trade-off to be 4 to 1.

quality recruits and total recruiter costs to derive the dollar cost of processing time. This figure drives the average recruiter cost of high and low quality recruits.

Processing Cost. The Army incurs additional processing costs for each non-prior service recruit (high or low quality), which consist of the total cost of examining, USAREC operations, and accession travel. The model will calculate a constant cost based on the total costs divided by the total number of recruits.

Total Cost. The average cost of low quality recruits is the sum of the constant recruiter cost and other processing costs. The average cost of a high quality recruit is equal to the average cost of low quality recruits adjusted for the higher average recruiter cost plus the per capita advertising expense plus any bonuses. The module will adjust the average cost of recruiting for first-year attrition, which differs by quality. The average cost to recruit members for a given MOS is then a weighted average of the costs of high and low quality recruits.

The marginal cost of recruiting is equal to the average cost, except that the model will assume that additional high quality recruits enter to receive an enlistment bonus. The marginal cost of a high quality recruit, then, is equal to average cost plus the infra-marginal rents generated by the higher bonus necessary to attract recruits. As before, the marginal cost for a given MOS is a weighted average of the marginal costs of high and low quality recruits.

Prior/Non-Prior Service Distribution. The model will take a weighted average of the costs estimated in this module and the costs of prior service accessions (described later) for each grade/MOS cell. Under the assumption that additional soldiers access with no prior military service, this module would account for all enlisted recruiting costs.

<u>The Reserve Component Generates Costs Acquiring Non-Prior Service Officers</u>. This module includes the Army's costs associated with the acquisition of non-prior service officers, such as advertising, scholarships, initial training, military pay and allowances for cadets and officer candidates, and operations and support costs for the Branch Immaterial Officer's Candidate School and Reserve Officer's Training Corps.

The Branch Immaterial Officer Candidate Course. TRADOC administers this course, which trains selected enlisted persons to serve as commissioned officers in Active and Reserve Component units. With an average load of approximately 210, this 14-week course commissions officers in all the accession specialties.

Senior Reserve Officers' Training Corps. The ROTC program attracts, motivates, and prepares selected college students to serve as commissioned officers in the Active and Reserve Components. The program consists of either a two-year basic course or a six-week basic camp, followed by a two-year advanced course at various ROTC locations. Normally between their junior and senior years, ROTC cadets attend an advanced camp where they receive military field training. After completing this program, cadets receive commissions as second lieutenants.

The Army Guard and Reserve offer some ROTC candidates simultaneous membership in advanced ROTC courses and the reserve forces, where they serve as officer-trainees. Participants in the Simultaneous Membership Program (SMP) receive both reserve pay and the $100 per month ROTC subsistence allowance. (Those on ROTC scholarship programs are generally not eligible for this program.) SMP participants receive they pay of an E-5 rate and perform the duties of a second lieutenant under the supervision of a commissioned officer. The cost of the Simultaneous Membership Program will include the cost of pay and allowances while on reserve duty plus the cost of the ROTC program.

The model computes officer acquisition costs for both NGPA/RPA and OMARNG/OMAR appropriations. Military personnel costs include the pay and allowances for both students and instructors. Operation and maintenance costs consist of advertising costs, scholarship costs, and operational support costs. For each appropriation, the average cost of officer acquisition for a given grade is a weighted average of the total costs divided by the number of graduates in that grade for each commissioning source.

Prior/Non-Prior Service Distribution. The model will take a weighted average of the costs estimated in this module and the costs of prior service acquisitions (described later) for each grade/MOS cell. Under the assumption that additional soldiers access with no prior military service, this module would account for all officer acquisition costs.

<u>The Reserve Component Generates Costs Recruiting and Acquiring Prior Service Personnel</u>. Individuals with prior military service can receive an affiliation bonus for electing to serve the remainder of their service in the Selected Reserves. Individuals must have completed an active duty tour and have a remaining military service obligation to be eligible for the bonus. They must then sign an agreement

to stay in the Selected Reserves for the remainder of the mandatory obligation.

The affiliation bonus is equal to $50 per month of remaining obligation served in affiliation with a unit in the Selected Reserve. If the obligation is 18 or fewer months, then the member receives the as lump sum upon entering the Selected Reserves. If the obligation is more than 18 months, then the member receives 1/2 of the total bonus as an initial lump sum and the remaining half on the 5^{th} anniversary of incurring the obligation.

Prior service accessions generate other recruiting and processing costs, but these should be much less than the cost of recruiting or acquiring non-prior service candidates. Those who enter the Selected Reserve with a remaining military obligation generate virtually no processing costs, but units spend resources recruiting them. Conversely, the Reserve Component does not spend money to recruit prior service members with no obligation but must incur the cost of processing them.

The initial model will not distinguish between prior service members with and without an obligation. The processing and recruiting costs will be allocated on a constant, per capita basis to all non-prior service members. The total cost of a prior service accession will equal the per capita recruiting and processing costs and the average cost of the affiliation bonus by MOS.

Prior/Non-Prior Service Distribution. The model will take a weighted average of the costs estimated in this module and the costs of non-prior service recruiting and acquisition for each grade/MOS cell. Under the assumption that additional soldiers access with no prior military service, this module would not contribute to the manpower costs.

<u>The Reserve Component Must Provide Training</u>. This module calculates the cost of initial active duty training (IADT) and "schoolhouse" training, including pay and allowances, instructors, materiel, and facilities. It does not include the costs of recurring training (i.e., IDT and ADT), as they form the military compensation module. As discussed in Chapter 3, this module includes only the training incurred by the reserve forces, ignoring the costs of previous military training that the Active Component incurs for prior service members.

Reservists participate in the following training programs:

- **Recruit Training** -- eight weeks of introductory and combat survival skill training given to enlisted personnel upon their initial entry into military service. It includes refresher training for certain prior service personnel.

- **Initial Skill Training** -- includes all formal training normally given immediately following recruit training and leading to the award of a military occupational specialty (MOS) at the lowest level.

- **One Station Unit Training (OSUT)** -- combines recruit and initial skill training into a single course for enlisted personnel in certain combat skills.

- **Skill Progression Training** -- specialized skill training provided to enlisted members after initial skill training.

- **Flight Training** -- includes Undergraduate Pilot Training (UPT), which qualifies aviation students as Army pilots, and Graduate Pilot Training, which includes courses for instructor pilots, instrument flight examiner, gunnery and specific pilot qualifications courses in various aircraft.

- **Professional Training** -- prepares selected DoD military and civilian personnel for the complex tasks that become their responsibilities as they progress in their careers (e.g., NDU, AWC, C&GSC, AFSC, DSMC, USASMA).

The model will reflect that training costs appear in several appropriations. NGPA/RPA costs consist of pay and allowances applied to student and instructor manyears. OMARNG/OMAR fund the costs of the operation of the training base and the Army training centers and schools that provide individual instruction to the Army's soldiers. Other costs include procurement dollars for training ammunition and training devices and FMHA dollars for maintenance of family housing. In each of these appropriations, the model will display costs by training category (e.g., recruit training, skill progression training).

The cost of training a soldier is independent of component. Hence, the model can get the average cost of training an individual from the Active Component model. The average cost of training will equal the true amount paid by the reserves, or the average cost per trainee multiplied by the proportion of non-prior service personnel, which the user supplies.[30] Assuming that additional soldiers have no prior military experience, every soldier in a grade/MOS cell receives the training, and the costs are nearly identical to the Active Component model.

<u>The Reserve Component Offers Reenlistment Bonuses to Its Members</u>. The Army Guard and Reserve offer reenlistment bonuses to qualified personnel reenlisting or extending a tour in the Selected Reserves.[31] Reservists can only receive one bonus in a career, and only those in targeted skills and units are eligible to receive the bonus. The NGPA/RPA appropriations fund reserve reenlistment bonuses.

Individuals with less than 10 years of total military service at ETS who reenlist for 6 years can receive a $2,500 bonus. They receive $500 on the effective date of the reenlistment and the remainder in payments of $200, $300, $300, $400, $400, and $400 at the end of each respective year of the contract.

Individuals with 6 to 10 years of total military service at ETS who reenlist for 3-5 years can receive a bonus of $1,250. They receive $250 on the effective date of the reenlistment and the remainder in payments of $200, $400, and $400 at the end of the first through third years of the term, respectively.

The average cost of reenlistment bonuses for a grade/MOS cell is the expected bonus amount weighted by the probability of receiving it, where both figures vary over grade and skill. The marginal cost computation of the reenlistment bonus is the average cost plus the cost of the infra-marginal rents that would be paid to those who would reenlist anyway.

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[30] This approach is technically correct only for initial active duty training, which all prior service member will have completed. Subsequent training costs per student must be multiplied by the proportion of non-prior service accessions and prior service accessions who have not had the training.

[31] This module does not account for reenlistment bonuses for National Guardsmen that are offered by certain States.

The Reserve Component Must Build a Fund to Provide Retired Pay to Qualified Members. This module accounts for the cost of the DoD's contribution to its military retirement fund under the provisions of Title III, Public Law 810, passed in 1948.[32] Under the accrual concept (effective in FY85) the Army budgets for retired pay in the NGPA/RPA accounts and transfers funds on a monthly basis to the Military Retirement Trust Fund, from which retirees receive payments.

Chapter 2 outlines the eligibility requirements for reserve retirement benefits. Reservists receive 2 1/2 percent of the active duty basic pay for each adjusted year of service for retirement calculations. The adjusted years of service is equal to the total retirement points earned over a career divided by 360.[33] Retired pay is computed at the time that the individual reaches age 60 and is based on the pay table in effect at that time.

The average cost of retired pay accrual is equal to the product of basic pay and a fixed normal cost percentage rate obtained from the DoD actuary.[34] 16 She uses the aggregate entry-age normal method and estimates the accrual percentage based upon all-DoD retention rates and retirement probabilities.

This Active Component model also provides an alternate estimate of military retirement pay accrual based on Army retention rates by CMF, using an approximation to the entry-age normal method. The Reserve Component model, at least in the initial development phase, will not compute this alternate estimate.

As discussed in Chapter 3, the extensive movement between components (and between categories within the Reserve Component) prohibits the calculation of continuation rates.

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[32] This module does not include the cost of State-funded retirement plans for National Guardsmen.

[33] All retirement points are included in the point total -- even if they were earned during a year that is not creditable toward the required 20 years of service.

[34] The fixed normal percentage is defined as the estimated level percentage of pay over an entire working career required to fund the retirement benefits of a typical group of new employees. The figure calculated by the DoD actuary (currently 52.2 percent) applies to all services and to both the Active and Reserve Components.

This movement also implies that estimating the retirement points accumulation, both in the past and in the future, would require too many assumptions or would be based on volatile historical data.

An alternate estimate using the Army Reserve Component specific probabilities of reaching retirement would show the true cost of the retirement fund. However, the OSD actuary rates represent the cost to the Army, and the model will initially use this figure in all applications.

The Reserve Component Incurs Other Miscellaneous Costs. This module captures miscellaneous costs, including the cost of benefits for reservists on active duty. It includes medical benefits, death gratuities paid to spouses and children of reservists who die on active duty, uniform expenses, and the Government contribution to Social Security. As discussed in Chapter 3, the model assumes that some benefits (e.g., access to MWR facilities) are available to reservists on active duty at no cost to the Reserve Component.

Active Duty Benefits. Reservists are eligible for some benefits while on active duty (e.g., medical benefits, death gratuities) that do generate costs. Hence, the model will split the costs of these benefits between the active duty inventory and a proportionate share of reservists (adjusted for full-time equivalents).

Military health care support costs depend on the number of military hospitals and the medical force structure, which are sized to provide an orderly transition to wartime status in the event of mobilization; the care provided to soldiers and their families is a secondary concern. Hence, the medical force structure is independent of the reserve end strength and current personnel compensation issues. The AMCOS model will not include the cost of facilities or the military pay of doctors and other military medical personnel, because the Army would incur these costs regardless.

Medical costs are in units of workload, which measure the resources necessary to provide a certain level of care. From the total budget appropriation, the number of workloads provided, and the total inventory of possible patients (active members and their dependents and reserve members), the model can derive an average cost of medical care that varies with the inventory of soldiers in a given cell.

Reservists on active duty for more than 30 days are also eligible for Civilian Health and Medical Program for the Uniformed Services (CHAMPUS) benefits. In general, members in the analysis population serve on active duty for more than

30 days only during individual training, and the model will attribute CHAMPUS costs only to this module.

CHAMPUS costs vary with family size and age of dependents, which in turn vary directly with grade. The average cost per patient is equal to the total government cost for CHAMPUS (inpatient and outpatient care) divided by total number of user beneficiaries (dependents of active duty sponsor). The average cost per soldier by grade is the cost per patient multiplied by the average family size per grade and the probability a family member will receive care to yield an average CHAMPUS cost by grade. CHAMPUS costs appear in the DoD's budget as part of the O&M appropriation, not the Army's.

The model will calculate the average cost of death gratuities as the total cost divided by the total number of soldiers in the inventory. The model will apply this average to all soldiers.

Uniform Expenses. In general, enlisted reservists do not receive uniform allowances. Rather, each soldier is issued a uniform as needed. Assuming that active duty uniform allowances equal the cost of the uniforms, we can assess the Reserve Component cost as a proportionate share of active duty allowances. The model will calculate the cost of uniforms as the initial issue allowance and assume that the cost of replacing it is 1/9th of the annual allowance for active duty personnel. The model will apply this rate to each enlisted soldier. Reserve officers receive a uniform allowance that the model can straightforwardly apply to officer costs.

FICA. The FICA tax represents the funds paid (Employer's tax) to the Social Security Administration as required by the Federal Insurance Contribution Act.[35] The FICA tax is equal to annual base pay (up to $45,000 for FY89) multiplied by a set percentage (currently 7.51).[36] The team will adjust both the percentage and the taxation cap for known legislation and future inflation.

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[35] As of January 1, 1988, drill pay for reservists is subject to Social Security taxes.

[36] A normal weekend Reservist's military pay will never reach the FICA cap. Hence, the Army will always pay 7.51 percent (or whatever the FICA tax is set at) of the basic pay to the Social Security Administration. This is regardless of whether the individual's total wages (civilian and reserve) exceed the cap. The Army, then, subsidizes Social Security to some extent.

Individual Travel. In some instances, reservists travel to annual training by themselves in a per diem status. The model will allocate the total budget for individual travel on a constant per capita basis to all reservists.

The Reserve Component and Veteran's Administration Provide Educational Benefits. This module estimates the expected present value of the basic benefit associated with the New G.I. Bill and the repayment of student loan programs.

The Veteran's Administration funds the basic G.I. Bill benefit, so it does not appear in either the Army's or the DoD's budget. However, this module computes the expected present value at the time of enlistment of the net Government outlays associated with this benefit.

Only high school graduates without a college degree in the Selected Reserves can participate in the New G.I. Bill program.[37] The program pays individuals who enroll in college a stipend of $140 per month for full-time, $105 per month for three-quarters-time, and $70 per month for half-time enrollment, respectively. The program pays no benefit for less than half-time enrollment, and the maximum lifetime benefit under this program is $5,040.

The expected present value of G.I. Bill outlays is equal to the possible expenditures discounted over time multiplied by the participation rates for the program among enlistees. The possible outlays are straightforward, but the participation rates could differ by MOS, grade, prior service, quality, and years of service. The model will initially use a single participation rate, and expand the module in later versions.

The Student Loan Repayment Program (SLRP) is available upon enlisting, reenlisting, or extending in the Selected Reserve for three years (prior service and in-service personnel) or six years (non-prior service accessions), regardless of time in service. Participation in this incentive does not preclude eligibility for any other incentive program. This program is available only to high quality personnel as defined earlier.

The loan amount repaid is the greater of $500 and 15 percent of the original balance of the loan plus the accrued interest not paid by the Department of Education. The

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[37] Those on ROTC scholarships are not eligible for the program. However, other SMP participant are eligible for G.I. Bill benefits.

maximum amount of loans for computing the 15 percent is $10,000. Hence, the maximum annual payment is $1,500 plus interest. This payment is made for each year of satisfactory service in the Selected Reserve, until the outstanding loan is fully repaid.

The Army also offers a Health Professionals Loan Repayment (HPLR) Program to commissioned officers of the Medical Corps and Army Nurse Corps. This program is similar to the SLRP except that the maximum loan repayment is $20,000, with a maximum annual payment of $3,000.

As with the G.I. Bill benefits, the expected present value of loan repayment outlays is equal to the possible discounted expenditures over time multiplied by the participation rates for the program among enlistees. In this case, however, the outlays differ by MOS and possibly other factors. The participation rates could differ by MOS, grade, prior service, quality, and years of service. The initial version of the model will use an average participation rate. The team will most likely vary the rate in future versions of the model.

Each State Provide Benefits and Pay for Its National Guard. As discussed in Chapter 3, Army National Guard members generate additional costs, which are borne by their States, compared to Army Reserve members. Although these costs are not a central concern for most model users, AMCOS will allow interested users to account for these costs.

Guardsmen can be called to State active duty by the Governor who controls their unit. In general, they receive their normal military pay for State duty, although some States set minimum pay amounts. Some States offer additional benefits (e.g., leave, enlistment bonuses, educational assistance) to compensate members for the extra duty that they serve.

The model will allow users estimating the costs of a National Guard unit to set the number of days of State active duty that the unit will serve on average. Using this input, the State minimum pays, the average YOS distribution, and the basic pay and allowance tables, the model will estimate the costs of State pay and allowances as in the military compensation module. In addition, the model will provide the user with a listing of each State's benefits and allow the user to enter the expected cost of the benefits.

The Structured Cost Data Base Contains the Transformed Cost Data

The model enters the manpower cost elements produced by the policy modules into the "structured cost" data base. These costs represent an estimate of the costs that the Army would incur as a soldier moves into that pay grade or MOS. The investment or common costs will not yet be allocated or amortized across pay grades.

The policy modules calculate costs over three major time periods -- drill, day, and year. For internal consistency, the structured cost data base will represent the daily cost for each element. Because reservists receive a day of active duty pay for each drill or each day of annual training, the daily cost serves as a common and understandable unit of measurement.

The structured cost data base stores the cost data by pay grade, MOS, prior service/quality, major cost element, budget appropriation, and marginal or average cost. The model flags the elements that are costs to the Government, but do not appear in the Army's budget. The structured cost data base is a cost model in its own right, for it defines the costs generated as a soldier progresses through the personnel system.

Unless personnel policies change, there is no reason to recreate the structured cost data base for every application of the model. Any particular cost analysis can begin with the structured cost data base. The model uses a copy of the data base, so users can modify elements of that copy without affecting the actual data base.

Users may alter the data base in a number of ways. For example, users may modify or delete certain elements. This would affect the cost flows that enter the cost estimating model and the results for that analysis but would not alter the original structured cost data base.

The structured cost data base, in which the flow costs of manpower reside, offers a number of design advantages. The cost flow data matrix is the kernel of the design structure, around which the two analytical components of the model (the policy analysis modules and the cost estimating model) revolve independently. The discipline supplied by the structured cost data base ensures that modifications to the policy analysis modules do not require changes to the estimating model, and vice versa.

The structured cost matrix provides users with ready access to the basic building blocks of manpower cost estimates. Users could literally build their own cost scenarios by deleting or modifying elements of the matrix and test the sensitivity of the estimates to changes in underlying data elements.

The Cost Estimating Model Computes Final Costs

The cost estimating model will produce a time-phased profile of manpower costs over the life cycle of the materiel system or unit configuration. Here, manpower requirements meet personnel cost flows. The model accepts the cost elements of the structured cost data base as input along with user-supplied manpower requirements to compute the total manpower life cycle cost.

As in the Active Component model, the AMCOS team will begin with a flexible static model. In this approach, the model estimates a unit cost (or price) of a manpower requirement with the same dimension as the requirements themselves (pay grade and MOS). The model then multiplies (element by element) the requirements and price matrices to compute the cost of manpower for that year of the life cycle. This approach is static in that it represents all personnel costs relevant to the manpower position with one static number or price.

Users will be able to enter separate manpower requirements for each of 30 years over which the model will generate costs. In addition to inputting the manpower requirements, users must define the discount and inflation rates for the estimation horizon. Although the discount rate in universal throughout the exercise, the model will allow various inflation rates by appropriation and time period. Finally, users must state whether the cost estimate is for a National Guard or a Reserve unit and what the IDT and ADT requirements are for that unit.

The cost model will take the daily costs represented in the structured cost data base and transform them into annual costs in two basic ways -- multiplication and amortization. First, the model multiplies the daily rate for drills and annual training by the training requirements specified by the user to compute the annual cost of inactive and active duty training. Second, the model must recreate an annual investment cost and amortize it over the expected career of the reservist.

Like the Active Component model, the Reserve Component model will allocate common costs as a proportion of expected years of service. If T is the total training cost and n is the expected years of service for a trained soldier, then the model allocated (1/n)*T to a given position. This arbitrary rule has the advantage of minimizing distortion of the relative costs of different pay grades.

The potential problems with amortization rules appear when calculating the actual recruiting and training cost outlays generated by the personnel system. Often, the Army can fill requirements without generating any additional recruiting or training costs, at least in the short run. A fixed allocation rule will attribute costs to the requirements, whether these costs are incurred or not.[38] Nevertheless, the model's allocation rule provides a close approximation to the actual costs generated.

Despite the problem with cost allocation rules, a static model offers some distinct advantages. The model will be straightforward and easy to understand and use. It will entail little or no development risk and can be constructed with fewer resources than the dynamic model. Finally, the AMCOS team can provide the static model with sufficient flexibility to lessen the problems associated with fixed allocation rules.

[38] Appendix A to our draft technical report, "Evaluation of the Prototype Model and Recommendations for AMCOS Development", SRA, 1986, contains a detailed discussion of the problems with cost amortization.

TECHNICAL REPORT

Evaluation of the Prototype Model and Recommendations for AMCOS Development

Lee S. Mairs
Paul F. Hogan

Program Manager: Richard W. Hunter, Ph.D

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Prepared for:

U.S. Army Research Institute
Manpower and Personnel Policy Research Group
5001 Eisenhower Avenue
Alexandria, Virginia 22333

COR: Dr. Hyder Lakhani

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AN EVALUATION OF THE PROTOTYPE

1.0 PURPOSE

The Army Research Institute has embarked upon a research and development program to obtain better tools for estimating Army manpower costs. Active, reserve, and civilian manpower costs amount to about $45 billion annually[1], or approximately 60% of the Army's budget. The Army needs a system of manpower cost models to better understand the cost implications of Army manpower, personnel, and force structure decisions, and to improve resource allocation within the Army. In the past, manpower costs have been underestimated resulting in decisions to procure systems that were more manpower intensive than they should have been. Changes in strength have been costed using average cost values when marginal costs were needed. The result was inadequate manpower resources to achieve the Army's programming and force management objectives.

As an initial step in this effort, the Army Research Institute contracted for development of a prototype cost model for the active enlisted force. That prototype is now complete. The purpose of this report is to evaluate that prototype "...from the standpoint of economic efficiency, computational efficiency and ease, reliability, and cost of data collection requirements". The Army Research Institute staff has chosen to broaden this task beyond a narrow, technical critique of the prototype to include a reexamination of the concept and scope of the prototype and exploration of alternative concepts.

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[1]Manpower Requirements Report FY 1987, Vol. III, Force Readiness Report, Washington, D.C., DoD, pp. VIII-6, 7, February 1986.

This review and evaluation of the prototype is based upon a detailed examination of the prototype model itself, a searching analysis of the technical reports[2] concerning the prototype, a general literature review including miscellaneous prototype briefing papers, and the Navy Billet Cost Model. Our review and evaluation attempts to answer the following questions:

(1) What is the purpose of the manpower cost estimates produced by the prototype?

(2) Do the estimates produced by the prototype accomplish this purpose?

(3) Are there advantages to alternative formulations?

The ultimate purpose of this report is to obtain Army decisions on how to proceed with the current AMCOS development effort.

2.0 ORGANIZATION

Section 3 outlines the overall objectives of AMCOS, briefly describes the prototype model and examines several of its fundamental conceptual shortcomings. Section 4 discusses several technical problems that require correction if we were to proceed with development within the conceptual framework of the prototype. Section 5 discusses the advantages of alternative conceptual approaches to the manpower cost model problem.

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[2] Two technical reports were reviewed, "Army Manpower Cost System (AMCOS): Active Enlisted Force Prototype", by Oliver Frankel, Robert Butler and Margaret Carpenter Huffman, The Assessment Group, undated, and "The Army Manpower Cost System (AMCOS): Enlisted Resource and Budget Cost Models", by Oliver Frankel and Robert Butler, The Assessment Group, May 1985.

3.0 BACKGROUND AND ANALYSIS

3.1 Overall AMCOS Objectives

The AMCOS system of models will fill a much needed gap in the ability of the Army to estimate manpower costs for both budget and resource allocation decisions. Most manpower or personnel cost models available to the Army (or to the other Services) consist of highly aggregate manpower cost estimates. Aggregation may be over the entire enlisted, or officer community, or by pay grade. There are virtually no Army manpower cost models that differentiate costs by skill as well as pay grade nor are there models that attempt to capture <u>all</u> the costs that vary as manpower strengths change.[3] The prototype model was a first attempt at filling this void.

3.2 Brief Description of the Prototype

The prototype was not developed by the current contractors. This section focuses on the prototype and does not necessarily represent what the current contractor recommends for the continued development on the AMCOS family of models. The prototype is a good start and provides the needed foundations for further development.

The prototype developed a pair of models to estimate the changes in budget and economic costs that result from changes in manpower positions in the active enlisted force. These estimates are intended to assist the Army in both budget and resource allocation decisions.

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[3]The Navy billet cost models attempt to do this for Navy manpower costs. See Appendix 1 for a brief discussion of these models.

The Technical Report on the prototype[4] states that the purpose of the prototype models is "...to provide annual marginal (real or budget) cost associated with a manpower position." Hence, the intended purpose of the prototype models is clear: to estimate the cost (or saving) from adding (or deleting) manpower positions in the Army.

The prototype models distinguish between "soldier" costs and "position" costs. "Soldier" costs are similar to the notion of manyear costs. It is the cost of employing an individual in a position for a year. The "position" cost differs from the "soldier" cost by an estimate of the value of the soldier's time lost to vacation, sick leave, and so forth called "downtime" in the prototype. Downtime cost is added to the "soldier" cost to obtain the position cost or billet cost, and, notionally, is intended to represent the cost of keeping the position fully manned throughout the year.

The prototype model also distinguishes "budget" costs from "real economic costs". The budget costs of a soldier are the funds that must be included annually in the Army's budget to "cover" the cost of a soldier for one year. The economic cost of a soldier represents the value placed on the resources expended, now or in the future, to keep an additional soldier in the Army for one year. Presumably, resource allocation decisions should be based upon the economic cost, not the budget cost, when the two cost measures differ.

Costs are computed by pay grade for each military occupational specialty (MOS) in the Army. Major cost elements include basic pay and allowances, accession and training costs, bonuses, rotation costs and retirement costs. "Joint costs", costs which are thought to benefit more than one pay grade within

[4]Butler et al, "Army Manpower Cost System: Active Enlisted Force Prototype, (1985), pp.23.

an MOS, are allocated over several pay grades in that MOS. These include bonuses, accession and training costs.

Costs vary among skills at a given pay grade primarily through differences in bonuses and training costs. Economic costs differ from budget costs in that (1) the "opportunity" costs of downtime and the training are excluded in the budget model; (2) no value is imputed to certain "in-kind" benefits, such as housing, in the budget model; and (3) fewer costs are amortized in the budget model.

As illustrated in Figure 1, the prototype system can be thought of as nested, or partially nested, models: budget and economic cost models for both soldier and position costs. Exclusion of "downtime" from the economic cost model of a billet or position results in the "soldier" economic costs, and eliminating certain imputed costs and amortization schemes from this cost yields the soldier budget model.

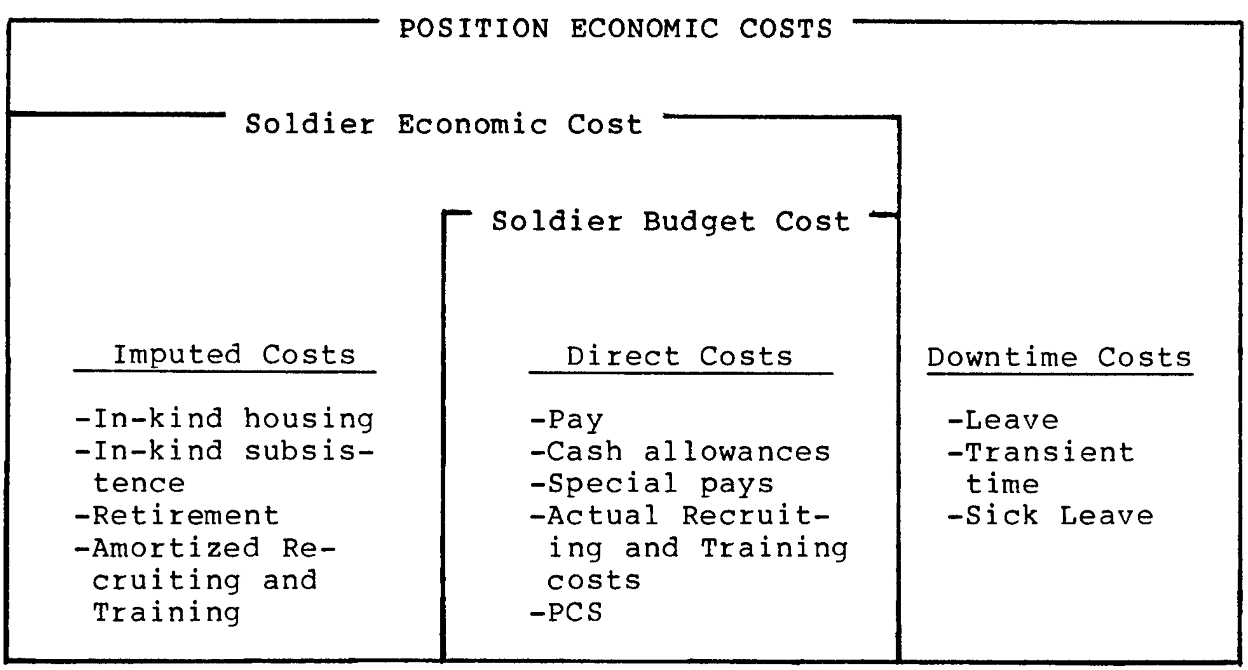

Figure 1. Prototype Model Nesting

3.3 Conceptual Shortcomings of the Prototype

The prototype models were intended to measure the marginal budget and economic costs of changes in Army manpower positions. These cost estimates would assist in budget formulation and resource allocation decisions. Unfortunately, the prototype has several conceptual shortcomings that limit its ability to perform as intended.

3.3.1 Historical Cost Accounting. The data base of the prototype consists of historical costs, sometimes three or four years out of date. This "historical cost" approach results in "precise" costs estimates that are out-of-date at the time they are produced. The costs estimates will, in general, be inappropriate for resource allocation decisions for current or future budgets.

The historical cost problem is, perhaps, symptomatic of a more fundamental shortcoming in the approach taken in the prototype. It appears that the prototype shifted from producing cost estimates that are useful to Army decision-makers, to one of detailed accounting of all of the manpower cost data available. This shift from an economic perspective to an accounting perspective leads one to eschew cost estimates based upon modeling and inference, in favor of one based upon what has actually happened in the past. The accounting model has its place, but a useful forecasting model concentrates on making the best estimates possible for the more significant elements affecting future costs.

Treatment of the costs of the Veteran's Educational Assistance Program (VEAP) illustrates this point. The prototype fails to include VEAP costs because historical cost data were unavailable. As an alternative, it would not have been difficult to construct a simple model of VEAP expenditures, after consulting with Army and other experts in the area, and include a best estimate of these costs in the prototype. The user could always omit them if he thought zero were a better estimate than that offered by the prototype or he could substitute alternative estimates if available. Unfortunately, adherence to historical cost accounting methods precludes this type of inferential modeling.

Consider a second, and perhaps more egregious, example of the weaknesses of the historical cost accounting approach. The prototype's method of estimating base pays, and other special pays, is to match historical tapes from the Army Finance Center, which contain individual financial records but do not contain information concerning the individual's MOS, with personnel tapes so that the compensation data could be distributed by MOS. This means that a military pay raise could not be reflected in the cost estimates until its payment is reflected in the Army Finance Center's tapes. The implication is that policy changes that are known at the time the manpower cost estimates are prepared will not be reflected in the cost estimates unless they have been implemented, and are reflected in the Army Finance Centers historical pay records.

The prototype places emphasis on what manpower costs were, under yesterday's policies, not upon estimating what they will be, under today's or tomorrow's policies. It may be argued that the best prediction of current, or future, manpower costs are what has occurred in the recent past. Clearly, historical data are useful in estimating current or future manpower costs; but they should be used as a guide and not as substitute for making the estimates themselves.

To be useful for either budgeting or resource allocation decisions, the manpower cost estimates for a given fiscal year must be available at least by the beginning of the execution of that fiscal year, and preferably earlier. The current prototype cost estimates are based upon historical data from FY 1983 and FY

1984, and were not finalized until FY 1985. Ironically, the issue of the year to which the cost estimates apply, and the timeliness of the estimates to either budget or programmatic decisions, is not addressed in the design documentation. If the prototype were updated today using its procedures, it would have to be based on 1984 and 1985 cost factors. In some instances, use of historical data is unavoidable. But, the historical cost estimates should be accepted reluctantly, not as a matter of philosophy.

3.3.2 Marginal Costs. The methodology used in the prototype is inherently inconsistent with marginal cost computations. The designers of the prototype consistently refer to the cost estimates produced by prototype as "marginal" budget or economic costs. At best, the prototype estimates may be average variable cost estimates.[5]

To see the problem with the prototype consider the treatment of reenlistment bonuses. The prototype takes the total bonus dollars paid in a given MOS, and allocates it over one or more pay grades. It then divides the allocation to each MOS pay grade cell by the number of soldiers in that cell. Setting aside the allocation issue, this treatment of the reenlistment bonus implies that the marginal cost of the bonus is equal to the average variable cost, something less than the full bonus incremental payment. To get another soldier to reenlist would require at least an additional full bonus and may require an increase in bonuses for everyone in the eligibility zone.

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[5]For some costs, average cost, average variable cost and marginal cost are the same. For example, basic pay will not change for small changes in manpower. It has no fixed component and, therefore, average total cost, average variable cost, and marginal cost would be the same. In most cases, however, they are not the same.

More generally, the marginal cost of a reenlistment bonus (with respect to a reenlistment) is given by the expression:

$$MC = B \left(1 + \frac{1}{S^e}\right)$$

where B is the current bonus level, in dollars, and S^e is the elasticity of supply of reenlistments with respect to bonuses.[6] The marginal cost of the bonus is equal to the dollar amount of bonus offered (its average cost) if the supply curve of reenlistments is perfectly elastic, i.e., someone is waiting in line to reenlist. If it is not perfectly elastic, then the marginal cost will be more than the current bonus and bonuses probably will need to be increased for all those reenlisting in that MOS-grade cell. The inclusion of "infra-marginal costs" means that marginal cost will greatly exceed average, in this instance.

The example illustrates a more general point. The prototype model consistently employs a methodology that is inconsistent with marginal cost theory. It imposes the constraint that the sum of the cost estimates multiplied by the number of people to which the estimate applies exhausts the budget for that category of cost. This can only be true if that cost estimate is the average cost. Marginal cost is the cost for the last increment. Hence, the prototype methodology computes true "marginal cost" only in the case where the marginal cost happens to equal the average cost.

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[6]The supply elasticity can vary from Ø to infinity. Note that we do not have to be concerned about a "backward bending" supply curve with respect to bonuses because the soldier gets no bonus if he does not reenlist.

It may be desirable to have AMCOS estimate average (or average variable) costs in addition to marginal costs. The budget cost model provides estimates of the budget implications of decisions already made. Average costs estimates allow one to estimate, quickly, the total budget cost of the manpower program. Average costs are not appropriate, however, for comparing the resource implications of alternatives. Average costs will tend to understate the real costs of alternatives, and the understatement will be greater for those resources in more inelastic supply.

3.3.3 Role of Budget Models. The role of the budget cost models has not been fully defined. If the budget cost model estimates are intended to assist in centralized budget preparation, then they focus on the wrong issues. The prototype budget cost estimates ignore issues such as seasonality in accessions and separations, shifts in longevity and the timing of outlays versus obligational authority, and, most fundamentally, the budget categories to which the costs accrue. Operation and maintenance categories (e.g., VEAP, advertising) are not separable from costs accruing to the military personnel account. Further, estimates of PCS costs, enlistment or reenlistment bonuses, or other costs components cannot be improved upon by the prototype, because the budget cost estimates themselves are simply allocations of historical budget costs.

3.3.4 Cost Amortization. The entire concept of "amortization" in the prototype economic model requires reexamination. The model relies on allocation schemes for "investment" costs such as training, reenlistment bonuses, and recruiting costs. No matter how painstaking the amortization schedule is constructed, it is, in essence, arbitrary. Although costs based upon these allocations may lead to correct conclusions for a number of economic analysis questions, they will provide erroneous answers for others. There is, in fact, no correct economic theory of cost amortization.

Consider, for example, the amortization of training cost. The training provided to an individual is likely to increase his productivity over a number of future periods and pay grades. However, this does not imply that the costs should be amortized over these future periods. When adding an additional E-7, the "amortized" portion of training from the prototype economic cost model will bear no necessary relationship to the actual economic cost implied. Moreover, the present value of actual training cost outlays is unlikely, ever, to equal the present value of the training costs implied by the prototype estimate.

It is not simply that the amortized costs may not "add up" to the present value of actual outlays that is the major concern. It is that the particular scheme for amortization may affect the relative costs of different skills, and hence, resource allocation decisions. Because the scheme is arbitrary and not dictated by theory, the resource allocation "signals" provided by the economic cost model may be unrealistic. An example is provided in Appendix 2.

The concept of "amortization" also suggests a careful reconsideration of the time dimension of the model. The prototype budget and economic models produce estimates of the cost of filling a position for a year. Yet, training and bonus costs are amortized over several years. The implicit assumption is, apparently, that demand for the billets persist at least through the amortization period.

Finally, related to the problem of cost amortization and the time dimension of the model is an issue that may be called "path dependence". Both the costs, and the time pattern of the costs, of filling an additional position will depend upon how that position is filled. For example, one could fill an E-5 position in a particular MOS by either retaining an E-5, who would otherwise separate by increasing the reenlistment bonus, or by "growing" another E-5 by promoting an E-4 and, ultimately recruiting additional people. The prototype model obfuscates this "path dependence", and its implications for manpower costs by forcing an inherently dynamic personnel system to conform to a single "stock" measure: the "delivered" cost of a position.

3.4 Implications

The test of a manpower cost model is not the detail with which it catalogues and allocates cost elements by paygrade and MOS. Rather, it is in its ability to provide sound and useful answers to relevant budget and resource allocation questions. The conceptual weaknesses inherent in the prototype clearly restricts the range of questions to which it applies.

Below, some of the limitations of the prototype model are illustrated by noting the difficulties of using the estimates to answer several hypothetical budget and resource allocation questions.

Budget Questions

How much should be added to the Army budget if the number of E-5 infantrymen is increased by 100?

- o The budget model produces only average costs estimates, so that accession and bonus costs will be understated if the supply of infantrymen is not perfectly elastic (which it is not).
- o The budget model does not break out costs by appropriation category, so it is not clear where the money should be added.
- o The prototypes costs are based upon the previous fiscal years pay rates, and, therefore, will understate the current cost.

Approximately how much could be saved in the PCS budget if the average tour length were increased by 10%?

- o The budget model is based upon historical PCS costs and policies, which are embedded in the model, and therefore cannot answer this question.

Resource Allocation Question

Ten E-6's in MOS XXX can be replaced with civilians which cost $y/year. Is it cost effective to do so?

- The economic model prototype will tend to understate the resource savings, because it estimates average rather than marginal costs for the E-6's.
- On the other hand, the prototype overstates the resource savings from training, because the training cost estimated for an E-6 is an allocated cost. It was incurred when the soldier was an E-1 - E-4.
- The cost of manning E-7 positions will change, other things being equal, if the full savings were realized by deleting the E-6 positions. This is not taken into account by the prototype, or any other static model.

The inability of the prototype to produce flawless cost estimates does not mean that the prototype is useless. It is a very useful beginning. Its average cost features may be valuable in future models, especially as checks to be sure that the parameters are current. The advantages of average costs is that they are straightforward, relatively easy to calculate, and remain fairly stable over a range of policy options and over time. Marginal costs are the exact opposite. The cost at the margin is always in flux (example: stockmarket prices). Without an open market, they are difficult to estimate, and estimates often are subjective. It is much harder to get agreement on marginal costs than average costs. Both costs are important. The Army has a number of average cost models, it has no marginal manpower cost models. The prototype was the first effort in this direction. It is a good beginning but it has some fundamental conceptual problems that should not be incorporated in the AMCOS family of models.

The purpose of research and development is to build on the existing base. The AMCOS family should build on the prototype models. It should use those parts that are useful and improve upon those aspects that are flawed.

4.Ø TECHNICAL DEFICIENCIES OF THE PROTOTYPE

This section documents the technical deficiencies of the prototype models that should be addressed in the next development stages. Relevant issues are identified by subject and the page number in the prototype reports.[7] Most of these technical deficiencies can be corrected within the framework of the prototype.

It should be noted at the outset that this review suffers from a significant handicap. The source code of the prototype models is missing. This means that we could not review the actual equations coded in the model, nor could we change the cost elements in the prototype. Finally, without the source code, it is impossible to validate and update the prototype models.

4.1 Problems with Economic Theory

The sound application of economic principles in estimating manpower costs is at least as important as insuring that the major elements of manpower costs are included in the estimates. The evaluation team discovered several major errors in the application of economic theory in the prototype.

4.1.1 "Opportunity Cost." The economic or resource model differs from the budget model in several areas by the inclusion of an imputed "opportunity cost" of the soldiers time. The "opportunity cost" measures the value of the soldiers productivity that is foregone when he is engaged in some activity other than his primary duty. It is correct to attempt to impute "opportunity costs" in the economic model, but opportunity cost is correctly defined as the value of the opportunities forgone by

[7] Frankel and Butler, "The Army Manpower Cost System (AMCOS) Enlisted Resource and Budget Cost Models", R-223, The Assessment Group, May 1985. Frankel, "HARDMAN Billet Cost Model", R-2Ø3, The Assessment Group, July 1983.

choosing the current alternative. The concept of opportunity cost is misapplied in several instances in the prototype. The following two examples illustrate this.

a. **Downtime Costs.** (p. 30). "Downtime cost" is defined in the Technical Report as the "opportunity cost" of unworked time.

> "It is modelled by estimating time lost due to vacations, holidays, rotations, sickness and correction, by attributing a marginal product value equivalent to the Army personnel cost."

The cost of "downtime" is measured by the pay the individual receives during this "downtime" period.

This prototype confuses opportunity cost with transaction costs. Downtime costs such as transient, patient, student and disciplinary (TPS&D) time do not represent the foregone value of an individual's labor in its next best alternative use. These are transaction costs associated with obtaining labor services, just as direct pay and allowances are costs.

This deficiency is more than a mere pedantic point as it reflects a misunderstanding of the manpower requirements determination process. When the manpower planner specifies four "spaces" to man a weapon system, this specification is based on a management engineering standard derived from the work load to be accomplished. The extra cost of keeping the system manned is explicitly accounted for by the requirement for four "spaces", each working six hour shifts. The magnitude of this cost is determined by the Army staff's definition of a work week, not by the decision to man the weapon 24 hours per day. For example, increasing the work week so that eight hour shifts become standard policy would change the management engineering standard so that only three "spaces" would be required for continuous manning.

Downtime such as TPS&D are personnel costs and are normally sized as a function of endstrength. TPS&D costs are budgeted in the Army "Individuals" account. It is reasonable to allocate these costs to individual MOS/PG spaces in a budget model; however, to also include Individual Account positions would result in double counting.

b. **Advanced Training.** (p. 74). The prototype economic model adds the cost of time spent in training, measured as the individual's pay during training, as a measure of the "opportunity cost" of time lost from duty during training. However, the opportunity cost of training is the difference between the value of the marginal product while in training and the wages paid. The prototype incorrectly assumes that the productivity of all soldiers in training is zero. The fact that there are soldiers potentially available increases the nation's security, implying a positive marginal product. Interestingly, on p. 78 of the Technical Report, the same issue is handled correctly in the analysis of division level training.

4.1.2 Marginal Cost Computations. The prototype includes only average variable or average total cost estimates in both the economic and budget models, not marginal costs. For certain types of costs, such as reenlistment bonuses (pp. 41-43), enlistment bonuses (pp. 68-69), and certain accession costs (p. 35), the distinction is obvious, and relatively easy to compute. When one induces an additional soldier to reenlist using bonuses, any increase in bonus must be paid to the infra-marginal reenlistees as well, as described in Section 3.2.2.

4.1.3 Investment Cost Amortization. As discussed in Section 3, any cost amortization scheme will be arbitrary. However, the economic cost estimates in the prototype model adopted amortization rules that are particularly arbitrary and misleading.

a. **Accession Costs.** (p. 35). Recruiting and initial training costs are arbitrarily allocated over the first term of enlistment. Hence, for given initial costs, the economic cost is greater the shorter the expected first term of service, regardless of retention beyond the first term. This amortization has a number of misleading implications. First, increasing the career force generates no accession costs. The implicit assumption is that all career growth occurs through increases in the first term reenlistment rate. Second, it may create the perverse implication that reducing the demand for two year enlistees "saves" more resources than reducing the demand for four year enlistees, even though the total training costs maybe higher for the four year enlistee.

b. **Selective Reenlistment Bonuses.** (pp. 41-43). Reenlistment bonuses also should be amortized over the expected future years of service. Equation (4.3), copied below from the technical report, defines the present cost to each grade, G, of one reenlistment for P years, in grade j and years of service k, incurred by the half of the bonus that is distributed as:

$$(4.3) \quad B_{i,j,k}(P,G) = \sum_{t=k+1}^{k+p} [A_{i,j,k}(P)/P^*(1+i)^t]PG_{i,j,k}(G,t).$$

where i indexes MOS and also represents the "money discount rate". Three errors are apparent:

(1) The 50% lump sum portion of the bonus received at reenlistment is not amortized.

(2) The annual payments received each year by the reenlistee are not amortized.

(3) The annual payments are discounted incorrectly as t is indexed from k+1 to k+P rather than 1 to P. The payments for a three year enlistment occurring in LOS 4 would be discounted by $(1+i)^4$, $(1+i)^5$, and $(1+i)^6$, instead of $(1+i)^1$, $(1+i)^2$ and $(1+i)^3$.

The best way of amortizing selective reenlistment bonuses is to discount them to the point at which they are awarded. A reenlistment purchases additional man years of Army service; hence, the present value should be amortized over the additional years of service purchased in much the same manner that training investments are amortized in the prototype AMCOS models.

Should amortization of costs be necessary, we propose a simple, consistent rule. Costs should be amortized over the expected remaining time in the Army, except when there is external information that the usefulness of the investment ended sooner. This rule may be modified when we consider the Army Reserve and National Guard Cost Models, to include time spent in the reserves. See Appendix 2 for further discussion of the amortization issue.

4.1.4 Discounting. The prototype model uses a 10% discount rate in discounting future costs. However, sometimes the 10% rate is treated as a real rate and other times as a nominal rate. For example, in discussion of enlistment bonuses (p. 68-69) the 10% is treated as a nominal rate, as future enlistment bonus payments are not adjusted for inflation. However, in the reenlistment bonus computations (pp. 41-43) the 10% rate is considered to be a real rate, and an adjustment for inflation is made when discounting bonus installment payments. Consistency is essential.

4.1.5 Misunderstanding of Economic Tools. There is inconsistency in the application of economic tools and principles throughout the prototype. A fundamental misinterpretation of "marginal costs" was discussed in Section 4.1.2. The prototype's allocation of the cost of recruiters is another example.

In the discussion of recruiter billet cost (p. 64), it is noted that a 1980 Rand study estimated the elasticity of supply of high quality recruits with respect to recruiters as .842. The designers of the prototype incorrectly conclude from this data that 8.42% of the recruiter's billet cost should be allocated to the cost of each recruit. The Rand elasticity means that a 1% increase in recruiters would produce a 0.84% increase in accessions.

In attempting to make sense out of this, the evaluation team can only conclude that the elasticity of supply was confused with the marginal product of recruiters. If the marginal product of a recruiter were, say, 10 recruits, then one might argue that the (average) marginal cost of a high quality recruit, is 10% of the cost of a recruiter. The prototypes' application of the recruiter elasticity makes no sense.

4.2 Other Technical Issues

4.2.1 Misplaced Emphasis and False Precision. The prototype computation of CHAMPUS costs (pp. 47-48) best illustrates this conceptual issue. Eight steps are described to allocate CHAMPUS costs by MOS and paygrade cells as functions of age, sex, probability of retirement, dental visits by sex and age, distribution of hospital episodes by age and sex, life expectancy, etc. The data to develop these various categories reflects not military health care experience, but the 1978 National Health Survey. All to little avail, as the preliminary division miscalculated the average variable cost of CHAMPUS.

Not only do mistakes creep in, but mistakes are much more difficult to recognize when the data are shredded into so many categories and then aggregated back to an MOS and paygrade cost. For example, using the data presented in Table 5.1 on page 48, the average cost of inpatient care by an Army recipient is

$3,546 and outpatient cost is $262. Unfortunately, the prototype then uses $2,476 for inpatient and $47.76 for outpatient cost in Table 5.2 on page 49. This error understates the active Active Army dependent's portion of CHAMPUS care by almost $67 million.

The CHAMPUS data problems continue in Table 4.2 on page 49. Here the average cost of inpatient admissions and outpatient visits are separated into age, male, female and all patients categories. In the first age category (<1) the average cost for all patients exceeds the average cost for male and the average cost for female inpatient admissions. This category must be an error. Note also that the prototype shows no variation in average cost by age or sex for outpatient visits.

The central issue here is that complex processing algorithms needlessly add to the cost of model development, yet add little meaningful information to aid a decision maker in a manpower, personnel or training resource allocation decision. Unless the detailed data yield differences that make a significant contribution to decision-making, detail is undesirable. It makes little or no sense to shred the data to fine levels of detail. False precision increases the overall "noise" of the estimates and, therefore, reduces their usefulness.

On the other hand, the prototype lacks meaningful detail on the two largest components of manpower costs, direct pay and retirement:

a. **Direct Compensation Elements.** (pp. 36-40). The study team questions the validity of using a one month data extract from the Army Finance Center JUMPS file. It is not the appropriate way to determine direct compensation elements.

The prototype discussion, although lengthy, does not address in sufficient detail several critical items concerning the mismatch between the AFC data and the DMDC master file copy. The discussion on page 40 indicates that there may have been a one quarter offset between the DMDC tape and the AFC tape. This mismatch might explain up to a one year YOS variance depending on the accession cycle; however, Table 4.2 on page 39 (included as Table 4.1) shows that the largest cell differences are for two to five years. The error rate is extremely large. For example, 11% of the records that DMDC reports with LOS = 8, JUMPS reports LOS less than 8.

Table 4.1 Comparative Year of Service Distributions: JUMPSX and EMFX

Comparison of LOS cells: 1 to 17

		EMFX																
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	1	25525	117	189	242	77	44	52	31	17	14	9	5	5	1	5	2	2
	2	26	11118	122	38	288	113	25	33	18	15	11	8	5	3	1	2	0
	3	11	13	8079	93	37	151	57	14	8	13	9	6	2	3	5	0	0
	4	13	6	30	6370	71	35	129	45	18	7	9	8	1	5	1	3	2
	5	6	5	4	22	6452	51	45	96	38	12	12	8	5	2	3	1	0
	6	3	1	9	10	17	5065	51	63	86	32	6	1	2	4	3	3	2
J	7	1	2	0	4	5	7	4060	40	61	77	34	8	6	3	10	3	0
U	8	1	0	0	1	3	6	7	2864	21	14	8	2	0	1	0	0	0
M	9	1	0	1	2	3	4	8	59	2399	12	5	3	2	0	0	0	1
P	10	1	0	0	1	1	4	3	6	41	2662	7	4	3	0	0	0	0
S	11	1	0	0	0	2	0	1	2	4	40	2270	9	6	0	0	0	0
X	12	0	0	1	1	0	1	0	0	1	20	51	1762	9	4	1	0	0
	13	0	0	1	0	0	0	0	2	4	14	39	49	1184	9	4	0	1
	14	0	0	0	0	1	0	0	3	1	31	57	43	65	1285	10	0	2
	15	0	0	0	0	0	0	0	0	0	3	33	36	47	67	1482	7	3
	16	0	0	0	0	0	0	0	0	0	0	3	6	16	34	78	1162	7
	17	0	0	0	0	0	0	0	0	0	2	1	4	5	20	46	62	1128

Further investigation with Mr. Robbie Brandewie at DMDC, Monterey revealed that about a 15% difference between the AFC and MILPERCEN (actual source of the DMDC data) exists for paygrades; however, DMDC research has not detected YOS variation as reported for the prototype model.

Note the symmetric pattern of variation across YOS in Table 3.1. For LOS less than eleven, the cell with the largest value is three years less than DMDC's reported cell. After LOS cell eleven the adjacent older cell has the largest population. These data provide strong evidence of a systematic error induced either by an error in the processing code or a mis-specification of the criteria for compiling the extract tapes. This error has an extremely large effect on the marginal cost. Pay rates comprise the largest fraction of personnel costs. Similarly, continuation rates derived from these data are used to amortize and allocate almost all of the other costs contained in the AMCOS model.

Note that the January 1, 1985, payraise also confounded the prototype base pay estimate. A Base Pay table lookup procedure would avoid this problem and is more appropriate than a one month extract of actual pays received. First, updating a pay table is a simple task, and the change in manpower costs are immediately reflected in AMCOS estimates. Second, random fluctuations in the amount of pay received by an individual that have nothing to do with his personnel characteristics are eliminated. For example, over payment of a travel claim or pay advances for PCS would result in less that the allowed base pay for a given pay grade and year of service cell. Table lookup also enables the manpower or personnel analyst to easily simulate the impact of alternative wage scenarios on manpower costs.

b. **Retirement Cost.** (pp. 8Ø-94). The prototype budget model does not contain the current Army's contribution to DoD retirement cost because it does not appear in the historical data base. The retirement costing algorithms contained in the prototype must be revised to reflect the changes in retired pay calculations, vesting percentages and COLA caps.

Retirement accrual accounting will be an issue in AMCOS development because the actual substance of retirement reform is not yet certain. All the alternatives allow the current members of the active force to be grandfathered. AMCOS needs a scheme to estimate retirement costs during the thirty year transition period. This issue is not trivial. The marginal cost of removing a senior billet may differ significantly from the cost of adding a billet if the personnel system actually terminates grandfathered individuals by lowering a zone B or zone C reenlistment bonus level or restricts reenlistment opportunity for careerists.

The Actuaries use an all service average retirement cost factor. This factor increases the Army cost relative the Navy and Air Force cost compared to using Service-specific factors. The reason is that the Navy and Air Force services are much more career intensive in their manpower requirements.

The official procedure for accrual costing must be used in the budget model; however, it is possible to calculate Army specific retirement costs based on forecasts of expected continuation rates and force profiles for use in the resource models.

Retirement accrual costing for the Reserve and National Guard will also be clouded by many theoretical and conceptual issues. Although modifications to the active retirement system have received the full-time attention of a variety of trained economists and analysts, little effort has been directed towards the issues raised for the Reserve and National Guard components of the Armed Forces. Unspecified changes to the civilian cost models must also be addressed as soon as a legislative plan receives Congressional approval.

4.2.2 Flexibility to Use Better Information. Often, a particular user will have better information concerning a narrow range of cost data than the designers of the model could afford to obtain. If so, the user should have the flexibility to use this information in the model. Several examples illustrate this.

a. **Special Pays.** (p. 43). The Prototype is correct in handling special pays; however, the user should be able to zero out special pays and other costs for which he may know the actual marginal rather than the average variable cost. For example, in an interactive model the user should be able to specify jump pay if he is adding a billet to a unit in the 82nd airborne division.

b. **Variable Housing Allowance.** (p. 44). The prototype treats VHA by computing the average allowance paid by MOS and paygrade intersection. In many of the instances, the manpower planner knows the geographical location of the "space" that he is creating. In such a situation a lookup table for VHA rates would be useful. The cells could then be adjusted for the fraction at that MOS/PG intersection that is drawing BAQ. This method would be possible in a policy-based AMCOS model, but cannot be done in the prototype.

c. **Overseas Pays and Allowances.** (p. 44). The prototype model computes averages obtained from AFC pay records. This category lumps together Foreign Duty Pay, Family Separation Allowance, Sea Duty Pay, Overseas Extension Pay and the Overseas Allowances for Cost of Living, Housing and Temporary Lodging. Once again, a lookup table would make the model sensitive to policy changes. A statistical analysis of these components to ensure that there is neither internal variance nor instability over time also appears worthwhile.

4.2.3 Accounting for Support Billets. A major issue in the construction of manpower cost models is whether the costs of people providing support services, such as training or recruiting, should be included in the position cost of operational personnel, or accounted for by separate position costs. The issue applies to civilian as well as military support.

A rule should be followed consistently across all of the models. The prototype does not appear to be consistent. The unwary analyst, therefore, may easily "double-count" the costs of support positions.

4.2.4 **Dated Policies.** The current version of the prototype contains several out-of-date policies. For example:

a. **Delayed Entry Program.** (p. 65). The prototype asserts that the additional cost of DEP is the higher starting pay of the individual in the DEP when active service commences as compared to an individual who joins the active Army right after signing a contract. Although this has minimal effect on the actual prototype costs, it indicates the problem with an historical cost based model. Congress eliminated this windfall for DEP enlistees in 1984.

b. **The New GI Bill.** The new GI Bill replaced the Veterans' Educational Assistance Program (VEAP) in July 1985. VEAP is now a sunk cost, as far the economic model is concerned, though it still must be included in the budget model.[8] Exclusion of the new GI Bill, and inclusion of the longevity costs of the delayed entry program, is yet another example of the disadvantages of methods that emphasize the allocation of historical costs.

4.2.5 **Inappropriate Allocation of Cost to Manpower.** Many cost elements are obviously manpower related, such as base pay, while others, such as weapons procurement, are clearly not. For some, however, the issue is not clear. One such item is medical benefits (pp. 47-55).

The prototype model defines medical benefits as the sum of four items: CHAMPUS, medical and dental care in Army facilities, care in non-defense facilities and care in Veteran's Administration facilities. The issue of a benefit and the concept of a cost is confused. CHAMPUS payments to civilian doctors, care

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[8]"Kickers" under the new GI Bill are budgeted on an accrual basis, where the "accrual" is computed as the expected present value of future costs.

in non-defense facilities and care in VA facilities are clearly costs that are correctly charged to manpower. However, it has been the clear and continued policy of the Army staff to state that Army medical facilities are sized solely as a result of careful estimates of wartime battle casualties, and are <u>independent of current personnel compensation issues</u>. In this context, medical treatment in defense facilities is a "tied good" or a positive externality of the medical training to increase readiness. To count this as a manpower cost of the current force is questionable.

4.2.6 Prototype Software Problems. The evaluation team has examined the prototype software. Unfortunately, there are software problems that severely constrain using the prototype.

The Army Research Institute provided the evaluation team with two floppy disks containing the prototype model software. The disks did not contain any of the original source code. Only the compiled PL/1 code is available. Without the source code the evaluation team and the Army is essentially denied access to any of the logic or the data base within the model. Even simple format changes to the introductory menus are virtually impossible to accomplish without the source code.

The prototype model software currently requires at least a ten megabyte hard disk. This constraint limits the ability to use the model. The evaluation team, however, has modified the floppy disk loading configuration so that the prototype model can be used on an IBM PC with only one floppy disk drive.

4.3 Correcting the Technical Problems

Many of the technical deficiencies of the prototype models can be corrected relatively easily within the conceptual framework of the prototype. These problems include:

- Amortization schemes.
- "Down-time" computation.
- Exclusion of non-manpower cost elements.
- Discounting errors.
- Policy changes.
- Some marginal cost computations.

However, many of the corrections would be merely palliatives. The major problems cannot be resolved within the conceptual framework of an historically based cost accounting model. In the next section, several alternative conceptual approaches to manpower cost models are examined to see if they might offer solutions to some of the shortcomings of the prototype.

5.0 ALTERNATIVE CONCEPTUAL APPROACHES

Many of the shortcomings of the prototype models are minor technical errors that can easily be corrected within the prototype's conceptual framework. However, some of the more serious limitations of the model are inherent in its conceptual framework and methodological approach. In this section, several alternative approaches are explored and recommendations for the further development of the AMCOS system of models are made.

5.1 Alternatives

5.1.1 Forward Looking, Policy Driven Cost Models. The single greatest limitation of the prototype's approach to manpower cost estimation is its reliance, solely, on the allocation of historical cost data. The weaknesses of this approach were discussed in some detail in Section 3. The two major problems are:

- Manpower costs are a historical record of budgets past. Their applicability to current or future budget or resource allocation decisions is questionable.

- The cost estimates have, embedded in them, past personnel and compensation policies. The prototype has no ability to project the effect of changes in policies on costs.

An alternative approach is to build an AMCOS system that is not a prisoner of historical personnel and compensation policies. If compensation or personnel policy changes, the AMCOS models should be able to project the effect of those changes even though they are not yet reflected in historical budget expenditures. The emphasis will be placed upon projecting current and future budget and economic costs, not upon meticulously accounting for historical costs.

Often, of course, historical costs, with minor adjustments for inflation, may be the best predictor of future costs. In other cases, historical experience may be the best way to estimate MOS distribution of current program levels. In many cases, MOS differences will be substantial and historical data will be inappropriate. The alternative approach does not preclude the use of historical cost data. It will be especially useful in calibrating the estimates. The alternative provides the flexibility to go beyond historical costs, when appropriate.

The approach taken by the prototype is to accept certain historical cost elements, such as PCS costs or bonus costs, as the product of the interaction of past personnel and compensation policies, and allocate these costs by grade and MOS based upon historical patterns. In that sense, then, historical policies are immutably embedded in the cost estimates. In the alternative approach, the process generating manpower cost elements must, itself, be modeled.

In its simplest form, this means that the model will contain explicit equations relating the total cost to the major factors generating that cost. For example, a single model of PCS costs would include the prices of various types of moves (operational, rotational, accession and overseas versus CONUS) and the expected quantity of each type of move as a function of key parameters such as average tour length. When a policy decision is made to increase or decrease the average tour length, or when the price of a certain type of move changes unexpectedly, the expected cost implications of these changes could be immediately available to the user.

A second example is the ability to model the effect of pay raises directly on manpower costs. The prototype has difficulty in simply estimating the total manpower costs of a military pay raise. Base pay and allowance costs are estimated from historical Army Finance Center data. There is no easy method to increase base pay and allowances in the prototype model. Certain "drag along" items that increase with pay and allowances, such as reenlistment bonuses, enter the model as independent cost elements rather than as a function of base pay.

The alternative approach will estimate base pay and allowance costs through a "look-up" table by pay grade and years of service. The pay and allowance elements in this table can be readily changed by the user, and the effects of these changes are immediately reflected in the manpower costs. Moreover, the "drag along" items such as reenlistment bonuses and retirement accrual costs will be explicitly modelled as a function of basic pay and, therefore, will instantly change when basic pay changes.

The emphasis of AMCOS estimates will shift from allocating historical budget costs to estimating current and future Army budget and economic costs. The "control totals" for the budget model, the total budget by appropriation categories under current personnel and compensation policies, will be the budget estimates for the relevant current or future year, not appropriations of previous years. This alternative approach will emphasize the usefulness of the cost estimates to current or future budget or resource allocation decisions, and deemphasize historical cost accounting issues.

The forward-looking, policy driven AMCOS will provide greater flexibility for incorporating recent policy changes in the cost estimates, and for estimating the cost implications of alternative policies. However, a model with ability to simulate the actual cost generating process is more expensive than a model that simply allocates historical costs. It may be too costly to model each cost element of AMCOS in detail. Detailed modeling should be limited to cost elements that have large effects on costs or for which the policy interest is great.

5.1.2 Dynamic, Flow Model of Manpower Costs. Adopting a forward-looking rather than historical cost approach to AMCOS will alleviate many of the conceptual problems of the prototype. A fundamental and difficult problem remains. The Army personnel system is a dynamic system. When one adds or deletes a manpower space, the response of the personnel system and the implications for cost are varied and complicated.

For example, suppose one were to add six E-5 spaces in a particular MOS. The personnel system could meet this demand by promoting E-4's, E-3's, etc. early, and recruiting and training more people at the E-1 level. This choice would generate one set of costs that would include recruiting and training costs, E-1/E-2 pay costs, and the incremental cost of those promoted being at a higher pay grade than they otherwise would have been that year. The cost of this policy, compared to a case where the six spaces were not added, would be different in the second year. The E-5's who were promoted early are still filling the E-5 billets. Hence, recruiting and training costs would drop below the first year costs. The second year budget costs of the E-5 billets will differ from the first year budget costs. Similarly, third year costs are likely to differ from second year costs, and so forth.

A second way of filling the E-5 spaces would be to retain, perhaps through additional reenlistment bonuses, six E-5's who would have otherwise separated. Here, the marginal budget cost of the E-5's would be the pay and allowances of the E-5's who are retained and the marginal reenlistment bonus costs including the incremental cost if higher bonuses were needed. Note that there are no training or recruiting costs, in this case. In the second year, the reenlistment bonus could, in theory, be reduced, because the E-5's that were induced to stay last year remain in the E-5 position.

There are, undoubtedly, many combinations of ways to fill the E-5 positions. The cost of filling the positions will vary depending upon exactly how the personnel system responds to the change in demand. For a given method, the first year costs will differ from the costs in the second and subsequent years.

The dynamic nature of the personnel system presents a significant problem for the development of manpower cost models that attempt to compute "the" marginal cost of an E-5 position. There appears to be an inherent difficulty in attempting to impose a single "stock" measure of manpower cost on an inherently dynamic personnel system.

The example above also illustrates one reason why amortization schemes are arbitrary and potentially misleading. Under the first method of filling a billet, one might argue that the amortized training and recruiting costs allocated to pay grade E-5 approximates the training and recruiting costs actually incurred by the increase in accession demand. However, no additional recruiting or training costs will be incurred when filling the position with an E-5 who would have otherwise separated.

There appears to be no method of computing a unique marginal budget or economic cost for a particular position. One alternative, however, is to accept this, and incorporate a dynamic flow model into AMCOS. In a sense, this would be an expansion of the approach taken in section 5.1.1, in that a flow model would allow the user the flexibility to model alternative ways or policies for filling positions.

Ideally, the cost model would include an inventory flow module, with a "requirements" constraint based on manpower demand. For each year of service, the inventory model would estimate outlay costs, by category. The model would estimate the costs incurred by a soldier as he moves through the system. Retention rates at the first and second term could be changed through changes in reenlistment bonuses.

The cost of an additional position would be calculated as the effect on outlay costs, by fiscal year, when the demand or requirements constraint changes. Presumably, one could "solve" the model according to some optimality criterion or specify a particular method for filling the position. The difference between budget costs and economic costs in such a model would be: (1) the budget model estimates costs in the Army budget for a specific year, while the economic model considers all costs appropriately discounted and (2) the present value of the economic costs of the position for one year would be the difference in the present value of the outlays with, and without, the one year change in the demand constraint. Note that the cost of a temporary change in the demand constraint may differ from the cost of a permanent change in the demand constraint.

This method would model actual budget outlays, and would avoid arbitrary cost amortization in the budget model. The problem with this approach, however, is that it is much too ambitious. The hardware and software demands would increase by an order of magnitude. Moreover, there are development risks associated with the dynamic program that solves for the inventory flow path that satisfies the "requirements" constraint that are more appropriate for a pure research effort than a developmental effort like AMCOS.

6.0 Recommendations

There are, at least, three alternatives for the further development of AMCOS.

(1) Proceed within the conceptual framework of the prototype, correcting minor technical errors.

(2) Adopt the forward-looking policy analysis modelling approach (Section 5.1.1), and abandon the historical cost approach of the prototype.

(3) Incorporate a dynamic flow model into AMCOS (Section 5.1.2) along with the forward-looking policy analysis approach.

The following table compares the key features of the alternatives.

Table 6.1 AMCOS Development Alternatives Comparison of Features

	Current/ Future Costs	Marginal Costs	Average Variable Costs	Average Total Costs	Cost Amortization	Budget Appropriation Categories	Policy Analysis	Dynamic Costs	Development Risk
Base Case Prototype	No	No	Yes	Yes	Yes	No	No	No	None
Alt 1 Revised Prototype	No	Yes	Yes	Yes	Yes	No	No	No	None
Alt 2 Forward-looking Policy Analysis Model	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Some
Alt 3 Dynamic Flow Model	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes

An Army system of manpower cost models that produces only historical cost and cannot estimate the effects of even the most simple changes in personnel and compensation policies will not, in our opinion, have great value to the Army. A full-scale dynamic "flow" model of costs by MOS, in principle, would provide the most accurate cost estimates and the most useful analysis tool. However, such a system of models would be difficult to develop and, perhaps, quite complicated to operate. The development risks suggest that this type of model would require more research prior to full scale development. The "forward-looking" policy analysis cost model offers the ability to provide timely cost estimates of relevance to budget and resource allocation decisions. Though the development risks are obviously greater than those of the existing prototype, the advantages appear to outweigh the potential costs.

We recommend Alternative 3, the "forward-looking" model. That alternative is consistent with the research and development aspects of the work. It will provide a usable aggregate model for the active enlisted by September 1986 and will enhance Army manpower cost modeling capability.

Appendix 1

Brief History of Navy's Billet Cost Models

Cost models that estimate manpower costs by skill have always been extremely scarce in the Defense Department. The potential usefulness of such models was officially recognized in 1967, when then Secretary of Defense Robert S. McNamara signed a memorandum to the military departments, requesting that all Services develop manpower cost estimates by skill and pay grade.

The Office of the Assistant Secretary of Defense (Systems Analysis) appointed Navy as the lead agency to develop a manpower cost methodology that could serve as a model for all the Services. A contract was awarded, and by the early 1970's the first Navy Billet Cost Model (BCM) was developed. The effort to get all the Services to adopt the model was abandoned, but the BCM was used by in-house Navy researchers through the 1970's and 1980's.

The Navy Billet Cost Model was subjected to a rigorous evaluation in 1976 by a newly formed group of economists in the Navy. This review uncovered a host of problems with the cost estimates, including:

(1) use of average, not marginal, costs;

(2) failure to discount future costs; and

(3) arbitrary factors to avoid pay grade cost inversions (which were themselves the result of arbitrary allocation of training costs).

An attempt was made to correct these, and other problems, while retaining the overall conceptual framework of the Billet Cost Model. This attempt was largely unsuccessful.

In 1978, the Navy contracted for a year-long independent review of the Billet Cost Model. This review uncovered coding errors that prompted a recompetition for the revision and maintenance of the Billet Cost Models. In 1979, a new contract was awarded, the new contractor substantially revised the Enlisted Billet Cost Model, and developed officer and civilian billet cost models.

The original use of the Navy Billet Cost Model was a measure of cost per position in an "optimization" model used by the Bureau of Naval Personnel. This "optimization" model was used to find an enlisted force that minimized "cost per unit of productivity."

The stakes were raised for producing sound and defensible manpower cost estimates over this period. The early BCM estimates were used almost exclusively as inputs into an arcane optimization model that was of little policy significance. Now the Billet Cost Model estimates were beginning to be used to compare military and civilian costs in military-civilian substitution analysis, and the newly formed Navy Hardman office began sponsoring further billet cost model development to support hardware/manpower tradeoff analyses.

However, the potential expansion of the use of the billet cost models within the Navy never occurred. The billet cost models are infrequently used in policy analysis today. Our analysis suggests two main reasons for this.

First, the Navy Billet Costs Models still suffer from inherent conceptual flaws. They are static models, not easily modified to reflect the costs of changing policy, and are saturated with patchwork fixes to correct the anomalous influences of arbitrary cost allocation and amortization rules.

The second reason is that, even if the models produced better cost estimates, the institutional incentives to make decisions based upon the billet cost estimates is weak. The billet cost models attempt to capture all the costs that vary with manpower decisions. Typically, these estimates will be larger than the manpower costs currently used in the budget process. Program managers have strong incentives to use the smallest manpower cost estimate possible in order to "sell" their program, and the budget process provides little institutional incentive to offset this.

The implications of these two observations for AMCOS are:

(1) the manpower cost estimates produced by AMCOS should be solidly grounded in theory, defensible, and relevant to policy questions, and

(2) strong sponsorship is required if the estimates are to be used in policy decisions.

Appendix 2
The Price of Cost Amortization

The benefits of a number of costly personnel activities, such as recruiting and training, accrue to the Army over time. An individual who is recruited or trained moves through a number of different positions, at a number of different pay grades, over his Army career. These pay grades and positions "share" in the benefits flowing from having recruited and trained that particular soldier. It is this observation that leads many to conclude that recruiting and training costs, and other costs that are of the nature of an investment, should be amortized over the future positions and pay grades that will benefit from the investment.

Consider the implications of allocating such costs only to the pay grades where they actually occur. Recruiting and training costs will tend to make the junior pay grades, e.g., E-1 through E-4, more costly relative to the senior grades. Such costs provide a potentially erroneous cost "signal" to substitute senior for junior personnel, or to substitute senior enlisted members for civilians, in the performance of a particular task or function. The fallacy, of course, is that a force consisting of all senior personnel obviously does not avoid these recruiting and training costs. Hence, some form of cost amortization seems sensible.

The problem with this apparently sensible conclusion is that, in the general case, any method for allocating these costs will be arbitrary and, in at least some instances, provide the wrong cost signals for resource allocation decisions. Consider the decision of adding an E-6 under two extreme allocation rules: (1) all prior training and recruiting costs for this skill will be added to the E-6 position; and (2) no prior training costs are added to this skill. In the first extreme case, one might decline the opportunity to add an E-6, because the costs are too high. Yet, this additional training and recruiting cost may not be incurred at all, because the E-6 position may be staffed by an E-5 who would otherwise have separated. On the other hand, filling the E-6 position might require recruiting and training additional people. In this case the second extreme, allocating no training and recruiting costs to the E-6 position, would understate its cost.

The argument is symmetrical when deleting an E-6 position is considered. Prior training costs are "sunk", so that if an E-6 actually leaves the Army, there is no saving in training cost. Of course, the permanent elimination of the E-6 position may result in a reduction in accession demand, and training costs. But, this forces us back to examining specific cases.

Consideration of the two extreme amortization rules suggests that any other amortization scheme cannot be correct in all cases. The value of the real resourcs that must be added or deleted because of a resource allocation decision cannot be represented by an amortization scheme, and provide correct cost signals in all cases.

Joint Costs

Training and recruiting costs are, in a sense, "joint costs" of producing future positions at various pay grades. A soldier provides a flow of services over time in each of the positions in which he serves. Whether or not an additional soldier is recruited and trained depends upon his value, not necessarily in any single position that he might occupy, but by his value in all the positions he will fill over this expected career. Hence, the implications for training and/or recruiting costs of adding or deleting one particular position or pay grade in isolation are unclear.

Consider two positions that a soldier is expected to fill over his career -- one as an E-4 and one as an E-5. Assume the cost of advanced intermediate training is $100. The value of that training while the soldier serves in the E-4 position is $60, and the value while he serves in an E-5 position is $50.[1] Clearly, the training cost should be incurred because it will generate a net return of $10. Now, assume that the demand for the E-5 position goes to zero. What is the saving in training costs from eliminating the position? Presumably, training for the E-4 position is no longer desirable, because the costs of that training, $100, outweighs the benefits of $60. (The net saving to the Army is only $40, however.)

Consider, however, another example in which training costs increase the soldiers' value by $50 in each of three pay grades over his career. Eliminating any one of these positions will not reduce training costs, because the training will occur for the other two positions anyway.

Can an allocation rule be constructed from this example? One such rule is, simply, allocate 100% of any training cost to a position if the existence of that position determines whether the training will occur. In the first example, $100 would be allocated to both the E-4 and E-5 position, while in the second example, each grade would be allocated no training cost. This rule provides the correct information, as long the decision is limited to adding or deleting a single billet, but it quickly breaks down when more than one position is being considered.

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[1]Moreover, assume that, either becaue of differences in productivity or institutional constraints, E-4's and E-5's are not substitutable. Discounting is ignored for expositional purposes.

Conclusions

There is no "correct" way to amortize joint costs. However, recruiting and training costs are large and cannot be ignored.

Ways of treating joint costs include:

(1) Choose an amortization scheme that is reasonable in most cases, and stay with it. (See, for example, the "rule" suggested in the text.

(2) Model the joint cost problem explicitly in a dynamic flow model.

(3) Display all relevant joint costs separately for each pay grade and offer the user a choice of allocation schemes including "all", "none", and a reasonable amortization rate in between.

Alternative (2) is beyond the scope of the project, narrowing the choice to (1) or (3).

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1980 - 1984 COHORT STATISTICS

ALAN F. DRISKO

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Reviewed by:

David K. Horne
Acting Leader, Manpower and Personnel Planning Team

Approved by:

Curtis L. Gilroy
Chief, Manpower and Personnel Policy Research Group

MANPOWER AND PERSONNEL RESEARCH LABORATORY

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES
5001 Eisenhower Avenue, Alexandria, VA 22333-5600

1980 - 1984 COHORT STATISTICS

Contents

1980 - 1984 COHORT STATISTICS

Overview of Findings

Attached is a series of tables produced at the request of TRADOC (DCSRM PAE) as support for its investigation of retention of quality soldiers in the Army. The same tables are provided for enlistment COHORT years 1980 through 1984 and for the entire cohort, the non-prior service cohort, and the prior service cohort. TABs are COHORT 80 located at TAB 1 through COHORT 84 located at TAB 5. Tables include statistics for many of the single variables described below and several cross tabs of these variables looking at variables such as TSC44 by EDLVL, TSC44 by EDLVL by RETHGP, and TSC44 by EDLVL by RETHGP and SPSTT, etc. Following is an explanation of the variables used:

PS - Prior service status.
- NPS - Non Prior Service
- PS - Prior Service

SPSTT is separation status. This is based on a rather comprehensive in-house algorithm to determine the status of an individual in the COHORT.

ETS - These soldiers separated normally at the end of their tour or separated for hardship reasons, medical reasons, etc. Included in this group are those who went into some sort of officer program. Essentially, these are the individuals who still have their educational benefits available to them after separation.

REUP - These soldiers reenlisted.

ATTRIT - These soldiers did not make it all the way through their first tour for some reason and had a Separation Program Designator indicating that their separation was under other than "normal" conditions. They were not necessarily separated under less than honorable conditions, but they were not around long enough to fulfil the contract they made with the Army.

STILL IN - These are the people who have extended their term of service rather than reenlisting. People at MDW reup office tell me that the maximum amount of time a soldier can extend in one enlistment term is 48 months so some of the people in this category may be a little suspect. There aren't many of them and I did not do any cross checking to see how many of them broke the rules.

BAD DATA - There are some records that have "bad data" in pertinent fields on the COHORT files. There are zeros where there should be useful numbers. There are a few (less than 1%) of the records that the algorithm cannot figure out what to do with. These two groups are all lumped together as "bad data".

AFQT44 - AFQT score based on the 1944 metric. The 1944 metric was the one in effect at that time. If statistics are needed on how things varied when AFQT score changed to the 1980 metric, AFQT for both metrics is available through the FY84 COHORT. AFQT44 is included in the means tables.

TSC44 is AFQT test category based on the 1944 metric.

MC44 is like TSC44 except categories I, II, and IIIA have been collapsed into one category I-IIIA.

EDLVL is entry-level civilian education level. This collapses an educational level variable on the COHORT that has much more detail.

COL GRAD	- College Graduate
HSGD	- High School Diploma Graduate
GED	- High School Equivalency
NNHSG	- Non High School Graduate
UNKNOWN	- Unknown

HSGRAD is just a collapsing of the EDLVL variable.

HS GRAD - These are the college grads and the high school diploma grads from EDLVL.

NON GRAD - These are the GED's and the non-high-school grads from EDLVL.

UNKNOWN - These are the UNKNOWN's from EDLVL.

RETHGP is a variable used to store a combination of race and ethnic background. The two variables RACE and ETHNIC GROUP from the COHORT files are used to create RETHGP.

HISPANIC - Everyone with some sort of Hispanic ethnicity. These people come out first and depend entirely on the ethnicity variable on the COHORT files. This variable has nothing to do with reported race.

WHITE - These are all those coded WHITE in race that are left after the Hispanics are taken out, i.e. non-Hispanic whites.

BLACK - These are all those coded BLACK in race that are left after the Hispanics are taken out, i.e. non-Hispanic blacks.

OTHER - These are all those coded OTHER in race that are left after the Hispanics are taken out, i.e. non-Hispanic others.

UNKNOWN - These are the soldiers left over after everyone else has been taken out.

SEX is included in the analysis.

GT80 - This is the only GT score on the COHORT files. All AA scores on the COHORT files have been standardized to the 1980 metric. GT80 is included in the means tables.

The remainder of this paper includes the actual descriptive statistics from the 1980 - 1984 COHORT files.

SEVERAL PERTINENT S.. .ISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

PS	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
NPS	157211	91.3	157211	91.3
PS	14929	8.7	172140	100.0

SPSTT	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
ETS	75234	43.7	75234	43.7
REUP	23687	13.8	98921	57.5
ATTRIT	65354	38.0	164275	95.4
STILL IN	5832	3.4	170107	98.8
BAD DATA	2033	1.2	172140	100.0

TSC44	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
I	3115	1.8	3115	1.8
II	25282	14.7	28397	16.5
IIIA	21577	12.5	49974	29.0
IIIB	38431	22.3	88405	51.4
IV	81913	47.6	170318	98.9
UNKNOWN	1822	1.1	172140	100.0

MC44	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
I-IIIA	49974	29.0	49974	29.0
IIIB	38431	22.3	88405	51.4
IV	81913	47.6	170318	98.9
UNKNOWN	1822	1.1	172140	100.0

EDLVL	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
COL GRAD	1875	1.1	1875	1.1
HSDG	93761	54.5	95636	55.6
GED	10469	6.1	106105	61.6
NNHSG	66016	38.4	172121	100.0
UNKNOWN	19	0.0	172140	100.0

SEVERAL PERTINENT S. ISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

HSGRAD	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
HS GRAD	95636	55.6	95636	55.6
NON HSG	76485	44.4	172121	100.0
UNKNOWN	19	0.0	172140	100.0

RETHGP	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
WHITE	106082	61.6	106082	61.6
BLACK	50533	29.4	156615	91.0
HISAPNIC	9645	5.6	166260	96.6
OTHER	5838	3.4	172098	100.0
UNKNOWN	42	0.0	172140	100.0

SEX	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
UNKNOWN	23	0.0	23	0.0
MALE	148507	86.3	148530	86.3
FEMALE	23610	13.7	172140	100.0

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	298	708	101	36	17	20	1180
	0.28	0.67	0.10	0.03	0.02	0.02	1.11
	25.25	60.00	8.56	3.05	1.44	1.69	
	9.97	3.14	0.59	0.14	0.05	1.99	
HSDG	2361	15398	9104	10475	13726	689	51753
	2.23	14.52	8.58	9.87	12.94	0.65	48.79
	4.56	29.75	17.59	20.24	26.52	1.33	
	79.02	68.38	52.99	40.42	37.63	68.42	
GED	132	1714	1442	1987	1747	260	7282
	0.12	1.62	1.36	1.87	1.65	0.25	6.86
	1.81	23.54	19.80	27.29	23.99	3.57	
	4.42	7.61	8.39	7.67	4.79	25.82	
NNHSG	197	4696	6534	13417	20979	37	45860
	0.19	4.43	6.16	12.65	19.78	0.03	43.23
	0.43	10.24	14.25	29.26	45.75	0.08	
	6.59	20.86	38.03	51.77	57.52	3.67	
UNKNOWN	0	1	1	0	4	1	7
	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	0.00	14.29	14.29	0.00	57.14	14.29	
	0.00	0.00	0.01	0.00	0.01	0.10	
TOTAL	2988	22517	17182	25915	36473	1007	106082
	2.82	21.23	16.20	24.43	34.38	0.95	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	4 0.01 0.88 7.27	111 0.22 24.34 6.38	98 0.19 21.49 3.15	111 0.22 24.34 1.21	124 0.25 27.19 0.35	8 0.02 1.75 1.17	456 0.90
HSDG	41 0.08 0.12 74.55	1168 2.31 3.48 67.09	2008 3.97 5.99 64.63	5435 10.76 16.20 59.24	24319 48.12 72.49 67.98	577 1.14 1.72 84.48	33548 66.39
GED	3 0.01 0.14 5.45	122 0.24 5.82 7.01	192 0.38 9.16 6.18	612 1.21 29.20 6.67	1090 2.16 52.00 3.05	77 0.15 3.67 11.27	2096 4.15
NNHSG	7 0.01 0.05 12.73	340 0.67 2.36 19.53	809 1.60 5.61 26.04	3017 5.97 20.91 32.88	10237 20.26 70.94 28.62	20 0.04 0.14 2.93	14430 28.56
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.00 66.67 0.01	1 0.00 33.33 0.15	3 0.01
TOTAL	55 0.11	1741 3.45	3107 6.15	9175 18.16	35772 70.79	683 1.35	50533 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.02 1.48 6.90	19 0.20 14.07 3.66	15 0.16 11.11 1.99	41 0.43 30.37 1.97	58 0.60 42.96 0.94	0 0.00 0.00 0.00	135 1.40
HSDG	20 0.21 0.38 68.97	342 3.55 6.45 65.90	407 4.22 7.67 54.12	1022 10.60 19.27 49.21	3455 35.82 65.14 55.82	58 0.60 1.09 74.36	5304 54.99
GED	5 0.05 0.66 17.24	46 0.48 6.04 8.86	70 0.73 9.20 9.31	194 2.01 25.49 9.34	427 4.43 56.11 6.90	19 0.20 2.50 24.36	761 7.89
NNHSG	2 0.02 0.06 6.90	112 1.16 3.25 21.58	260 2.70 7.55 34.57	820 8.50 23.82 39.48	2248 23.31 65.29 36.32	1 0.01 0.03 1.28	3443 35.70
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.02 100.00 0.03	0 0.00 0.00 0.00	2 0.02
TOTAL	29 0.30	519 5.38	752 7.80	2077 21.53	6190 64.18	78 0.81	9645 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=OTHER

EDLVL TSC44

EDLVL	FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	FREQUENCY	4	32	15	29	23	1	104
	PERCENT	0.07	0.55	0.26	0.50	0.39	0.02	1.78
	ROW PCT	3.85	30.77	14.42	27.88	22.12	0.96	
	COL PCT	9.30	6.36	2.83	2.31	0.67	1.92	
HSDG	FREQUENCY	35	310	279	555	1914	43	3136
	PERCENT	0.60	5.31	4.78	9.51	32.79	0.74	53.72
	ROW PCT	1.12	9.89	8.90	17.70	61.03	1.37	
	COL PCT	81.40	61.63	52.64	44.29	55.37	82.69	
GED	FREQUENCY	3	40	51	94	131	7	326
	PERCENT	0.05	0.69	0.87	1.61	2.24	0.12	5.58
	ROW PCT	0.92	12.27	15.64	28.83	40.18	2.15	
	COL PCT	6.98	7.95	9.62	7.50	3.79	13.46	
NNHSG	FREQUENCY	1	121	185	575	1389	1	2272
	PERCENT	0.02	2.07	3.17	9.85	23.79	0.02	38.92
	ROW PCT	0.04	5.33	8.14	25.31	61.14	0.04	
	COL PCT	2.33	24.06	34.91	45.89	40.18	1.92	
UNKNOWN	FREQUENCY	0	0	0	0	0	0	0
	PERCENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ROW PCT	.	.	.	.	.	.	
	COL PCT	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	FREQUENCY	43	503	530	1253	3457	52	5838
	PERCENT	0.74	8.62	9.08	21.46	59.22	0.89	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
HSDG	0 0.00 0.00 .	2 4.76 10.00 100.00	1 2.38 5.00 16.67	4 9.52 20.00 36.36	12 28.57 60.00 57.14	1 2.38 5.00 50.00	20 47.62
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	1 2.38 25.00 16.67	1 2.38 25.00 9.09	2 4.76 50.00 9.52	0 0.00 0.00 0.00	4 9.52
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	1 2.38 9.09 16.67	4 9.52 36.36 36.36	6 14.29 54.55 28.57	0 0.00 0.00 0.00	11 26.19
UNKNOWN	0 0.00 0.00 .	0 0.00 0.00 0.00	3 7.14 42.86 50.00	2 4.76 28.57 18.18	1 2.38 14.29 4.76	1 2.38 14.29 50.00	7 16.67
TOTAL	0 0.00	2 4.76	6 14.29	11 26.19	21 50.00	2 4.76	42 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE OF SPSTT BY TSC44

SPSTT TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	1424 0.83 1.89 45.71	11526 6.70 15.32 45.59	9549 5.55 12.69 44.26	16072 9.34 21.36 41.82	35939 20.88 47.77 43.87	724 0.42 0.96 39.74	75234 43.71
REUP	576 0.33 2.43 18.49	3962 2.30 16.73 15.67	2960 1.72 12.50 13.72	4939 2.87 20.85 12.85	10777 6.26 45.50 13.16	473 0.27 2.00 25.96	23687 13.76
ATTRIT	700 0.41 1.07 22.47	7774 4.52 11.90 30.75	8008 4.65 12.25 37.11	15775 9.16 24.14 41.05	32761 19.03 50.13 39.99	336 0.20 0.51 18.44	65354 37.97
STILL IN	394 0.23 6.76 12.65	1742 1.01 29.87 6.89	818 0.48 14.03 3.79	1174 0.68 20.13 3.05	1438 0.84 24.66 1.76	266 0.15 4.56 14.60	5832 3.39
BAD DATA	21 0.01 1.03 0.67	278 0.16 13.67 1.10	242 0.14 11.90 1.12	471 0.27 23.17 1.23	998 0.58 49.09 1.22	23 0.01 1.13 1.26	2033 1.18
TOTAL	3115 1.81	25282 14.69	21577 12.53	38431 22.33	81913 47.59	1822 1.06	172140 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE OF SPSTT BY MC44

SPSTT MC44

FREQUENCY PERCENT ROW PCT COL PCT	I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	22499 13.07 29.91 45.02	16072 9.34 21.36 41.82	35939 20.88 47.77 43.87	724 0.42 0.96 39.74	75234 43.71
REUP	7498 4.36 31.65 15.00	4939 2.87 20.85 12.85	10777 6.26 45.50 13.16	473 0.27 2.00 25.96	23687 13.76
ATTRIT	16482 9.57 25.22 32.98	15775 9.16 24.14 41.05	32761 19.03 50.13 39.99	336 0.20 0.51 18.44	65354 37.97
STILL IN	2954 1.72 50.65 5.91	1174 0.68 20.13 3.05	1438 0.84 24.66 1.76	266 0.15 4.56 14.60	5832 3.39
BAD DATA	541 0.31 26.61 1.08	471 0.27 23.17 1.23	998 0.58 49.09 1.22	23 0.01 1.13 1.26	2033 1.18
TOTAL	49974 29.03	38431 22.33	81913 47.59	1822 1.06	172140 100.00

SEVERAL PERTINENT S .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE OF SPSTT BY EDLVL

SPSTT EDLVL

FREQUENCY PERCENT ROW PCT COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	718 0.42 0.95 38.29	44100 25.62 58.62 47.03	4017 2.33 5.34 38.37	26387 15.33 35.07 39.97	12 0.01 0.02 63.16	75234 43.71
REUP	350 0.20 1.48 18.67	17406 10.11 73.48 18.56	1543 0.90 6.51 14.74	4385 2.55 18.51 6.64	3 0.00 0.01 15.79	23687 13.76
ATTRIT	401 0.23 0.61 21.39	27255 15.83 41.70 29.07	4420 2.57 6.76 42.22	33275 19.33 50.92 50.40	3 0.00 0.00 15.79	65354 37.97
STILL IN	377 0.22 6.46 20.11	3898 2.26 66.84 4.16	380 0.22 6.52 3.63	1176 0.68 20.16 1.78	1 0.00 0.02 5.26	5832 3.39
BAD DATA	29 0.02 1.43 1.55	1102 0.64 54.21 1.18	109 0.06 5.36 1.04	793 0.46 39.01 1.20	0 0.00 0.00 0.00	2033 1.18
TOTAL	1875 1.09	93761 54.47	10469 6.08	66016 38.35	19 0.01	172140 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE OF SPSTT BY HSGRAD

SPSTT HSGRAD

FREQUENCY / PERCENT / ROW PCT / COL PCT	HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	44818	30404	12	75234
	26.04	17.66	0.01	43.71
	59.57	40.41	0.02	
	46.86	39.75	63.16	
REUP	17756	5928	3	23687
	10.31	3.44	0.00	13.76
	74.96	25.03	0.01	
	18.57	7.75	15.79	
ATTRIT	27656	37695	3	65354
	16.07	21.90	0.00	37.97
	42.32	57.68	0.00	
	28.92	49.28	15.79	
STILL IN	4275	1556	1	5832
	2.48	0.90	0.00	3.39
	73.30	26.68	0.02	
	4.47	2.03	5.26	
BAD DATA	1131	902	0	2033
	0.66	0.52	0.00	1.18
	55.63	44.37	0.00	
	1.18	1.18	0.00	
TOTAL	95636	76485	19	172140
	55.56	44.43	0.01	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE OF SPSTT BY RETHGP

SPSTT RETHGP

FREQUENCY / PERCENT / ROW PCT / COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	45404 26.38 60.35 42.80	22497 13.07 29.90 44.52	4585 2.66 6.09 47.54	2731 1.59 3.63 46.78	17 0.01 0.02 40.48	75234 43.71
REUP	11205 6.51 47.30 10.56	9832 5.71 41.51 19.46	1690 0.98 7.13 17.52	958 0.56 4.04 16.41	2 0.00 0.01 4.76	23687 13.76
ATTRIT	44095 25.62 67.47 41.57	16362 9.51 25.04 32.38	2978 1.73 4.56 30.88	1901 1.10 2.91 32.56	18 0.01 0.03 42.86	65354 37.97
STILL IN	4163 2.42 71.38 3.92	1209 0.70 20.73 2.39	275 0.16 4.72 2.85	181 0.11 3.10 3.10	4 0.00 0.07 9.52	5832 3.39
BAD DATA	1215 0.71 59.76 1.15	633 0.37 31.14 1.25	117 0.07 5.76 1.21	67 0.04 3.30 1.15	1 0.00 0.05 2.38	2033 1.18
TOTAL	106082 61.63	50533 29.36	9645 5.60	5838 3.39	42 0.02	172140 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE OF SPSTT BY SEX

SPSTT / SEX (FREQUENCY, PERCENT, ROW PCT, COL PCT)	UNKNOWN	MALE	FEMALE	TOTAL
ETS	12	66858	8364	75234
	0.01	38.84	4.86	43.71
	0.02	88.87	11.12	
	52.17	45.02	35.43	
REUP	2	20160	3525	23687
	0.00	11.71	2.05	13.76
	0.01	85.11	14.88	
	8.70	13.58	14.93	
ATTRIT	7	54595	10752	65354
	0.00	31.72	6.25	37.97
	0.01	83.54	16.45	
	30.43	36.76	45.54	
STILL IN	2	5249	581	5832
	0.00	3.05	0.34	3.39
	0.03	90.00	9.96	
	8.70	3.53	2.46	
BAD DATA	0	1645	388	2033
	0.00	0.96	0.23	1.18
	0.00	80.91	19.09	
	0.00	1.11	1.64	
TOTAL	23	148507	23610	172140
	0.01	86.27	13.72	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	110 0.24 24.94 8.06	254 0.56 57.60 2.45	40 0.09 9.07 0.52	16 0.04 3.63 0.15	8 0.02 1.81 0.05	13 0.03 2.95 3.39	441 0.97
HSDG	1120 2.47 4.56 82.05	7479 16.47 30.44 72.27	4459 9.82 18.15 58.04	4972 10.95 20.24 45.69	6289 13.85 25.60 42.66	252 0.56 1.03 65.63	24571 54.12
GED	47 0.10 1.75 3.44	639 1.41 23.73 6.17	552 1.22 20.50 7.19	675 1.49 25.06 6.20	673 1.48 24.99 4.57	107 0.24 3.97 27.86	2693 5.93
NNHSG	88 0.19 0.50 6.45	1976 4.35 11.17 19.09	2631 5.79 14.87 34.25	5219 11.49 29.50 47.96	7768 17.11 43.90 52.69	12 0.03 0.07 3.13	17694 38.97
UNKNOWN	0 0.00 0.00 0.00	1 0.00 20.00 0.01	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.01 80.00 0.03	0 0.00 0.00 0.00	5 0.01
TOTAL	1365 3.01	10349 22.79	7682 16.92	10882 23.97	14742 32.47	384 0.85	45404 100.00

SEVERAL PERTINENT S ..STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	43	37	50	47	2	180
	0.00	0.19	0.16	0.22	0.21	0.01	0.80
	0.56	23.89	20.56	27.78	26.11	1.11	
	4.35	6.18	2.92	1.34	0.29	0.69	
HSDG	18	474	840	2235	11639	223	15429
	0.08	2.11	3.73	9.93	51.74	0.99	68.58
	0.12	3.07	5.44	14.49	75.44	1.45	
	78.26	68.10	66.35	59.74	70.61	77.43	
GED	0	47	71	270	419	48	855
	0.00	0.21	0.32	1.20	1.86	0.21	3.80
	0.00	5.50	8.30	31.58	49.01	5.61	
	0.00	6.75	5.61	7.22	2.54	16.67	
NNHSG	4	132	318	1186	4377	14	6031
	0.02	0.59	1.41	5.27	19.46	0.06	26.81
	0.07	2.19	5.27	19.67	72.58	0.23	
	17.39	18.97	25.12	31.70	26.55	4.86	
UNKNOWN	0	0	0	0	1	1	2
	0.00	0.00	0.00	0.00	0.00	0.00	0.01
	0.00	0.00	0.00	0.00	50.00	50.00	
	0.00	0.00	0.00	0.00	0.01	0.35	
TOTAL	23	696	1266	3741	16483	288	22497
	0.10	3.09	5.63	16.63	73.27	1.28	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2	5	5	18	22	0	52
	0.04	0.11	0.11	0.39	0.48	0.00	1.13
	3.85	9.62	9.62	34.62	42.31	0.00	
	22.22	2.18	1.39	1.98	0.72	0.00	
HSDG	7	160	199	443	1736	21	2566
	0.15	3.49	4.34	9.66	37.86	0.46	55.97
	0.27	6.24	7.76	17.26	67.65	0.82	
	77.78	69.87	55.28	48.63	57.01	67.74	
GED	0	18	31	79	202	9	339
	0.00	0.39	0.68	1.72	4.41	0.20	7.39
	0.00	5.31	9.14	23.30	59.59	2.65	
	0.00	7.86	8.61	8.67	6.63	29.03	
NNHSG	0	46	125	371	1084	1	1627
	0.00	1.00	2.73	8.09	23.64	0.02	35.49
	0.00	2.83	7.68	22.80	66.63	0.06	
	0.00	20.09	34.72	40.72	35.60	3.23	
UNKNOWN	0	0	0	0	1	0	1
	0.00	0.00	0.00	0.00	0.02	0.00	0.02
	0.00	0.00	0.00	0.00	100.00	0.00	
	0.00	0.00	0.00	0.00	0.03	0.00	
TOTAL	9	229	360	911	3045	31	4585
	0.20	4.99	7.85	19.87	66.41	0.68	100.00

SEVERAL PERTINENT S ISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.07 4.44 7.41	16 0.59 35.56 6.35	5 0.18 11.11 2.10	14 0.51 31.11 2.61	8 0.29 17.78 0.48	0 0.00 0.00 0.00	45 1.65
HSDG	22 0.81 1.44 81.48	155 5.68 10.16 61.51	140 5.13 9.17 58.82	236 8.64 15.47 43.95	956 35.01 62.65 57.69	17 0.62 1.11 85.00	1526 55.88
GED	3 0.11 2.34 11.11	23 0.84 17.97 9.13	21 0.77 16.41 8.82	28 1.03 21.88 5.21	50 1.83 39.06 3.02	3 0.11 2.34 15.00	128 4.69
NNHSG	0 0.00 0.00 0.00	58 2.12 5.62 23.02	72 2.64 6.98 30.25	259 9.48 25.10 48.23	643 23.54 62.31 38.81	0 0.00 0.00 0.00	1032 37.79
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	27 0.99	252 9.23	238 8.71	537 19.66	1657 60.67	20 0.73	2731 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	.	0.00	0.00	0.00	0.00	
HSDG	0	0	0	0	7	1	8
	0.00	0.00	0.00	0.00	41.18	5.88	47.06
	0.00	0.00	0.00	0.00	87.50	12.50	
	.	.	0.00	0.00	58.33	100.00	
GED	0	0	1	0	1	0	2
	0.00	0.00	5.88	0.00	5.88	0.00	11.76
	0.00	0.00	50.00	0.00	50.00	0.00	
	.	.	33.33	0.00	8.33	0.00	
NNHSG	0	0	0	0	3	0	3
	0.00	0.00	0.00	0.00	17.65	0.00	17.65
	0.00	0.00	0.00	0.00	100.00	0.00	
	.	.	0.00	0.00	25.00	0.00	
UNKNOWN	0	0	2	1	1	0	4
	0.00	0.00	11.76	5.88	5.88	0.00	23.53
	0.00	0.00	50.00	25.00	25.00	0.00	
	.	.	66.67	100.00	8.33	0.00	
TOTAL	0	0	3	1	12	1	17
	0.00	0.00	17.65	5.88	70.59	5.88	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 6 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	50	87	16	6	3	2	164
	0.45	0.78	0.14	0.05	0.03	0.02	1.46
	30.49	53.05	9.76	3.66	1.83	1.22	
	9.01	2.58	0.80	0.25	0.12	0.82	
HSDG	459	2659	1351	1434	1448	189	7540
	4.10	23.73	12.06	12.80	12.92	1.69	67.29
	6.09	35.27	17.92	19.02	19.20	2.51	
	82.70	78.76	67.35	59.01	55.84	77.14	
GED	21	266	200	245	177	45	954
	0.19	2.37	1.78	2.19	1.58	0.40	8.51
	2.20	27.88	20.96	25.68	18.55	4.72	
	3.78	7.88	9.97	10.08	6.83	18.37	
NNHSG	25	364	438	745	965	9	2546
	0.22	3.25	3.91	6.65	8.61	0.08	22.72
	0.98	14.30	17.20	29.26	37.90	0.35	
	4.50	10.78	21.83	30.66	37.22	3.67	
UNKNOWN	0	0	1	0	0	0	1
	0.00	0.00	0.01	0.00	0.00	0.00	0.01
	0.00	0.00	100.00	0.00	0.00	0.00	
	0.00	0.00	0.05	0.00	0.00	0.00	
TOTAL	555	3376	2006	2430	2593	245	11205
	4.95	30.13	17.90	21.69	23.14	2.19	100.00

SEVERAL PERTINENT S ıSTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 7 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	21 0.21 15.79 5.20	34 0.35 25.56 4.70	34 0.35 25.56 1.77	41 0.42 30.83 0.62	3 0.03 2.26 1.52	133 1.35
HSDG	9 0.09 0.11 90.00	314 3.19 3.89 77.72	566 5.76 7.01 78.28	1481 15.06 18.35 77.18	5525 56.19 68.44 83.98	178 1.81 2.20 90.36	8073 82.11
GED	1 0.01 0.26 10.00	25 0.25 6.54 6.19	37 0.38 9.69 5.12	108 1.10 28.27 5.63	197 2.00 51.57 2.99	14 0.14 3.66 7.11	382 3.89
NNHSG	0 0.00 0.00 0.00	44 0.45 3.54 10.89	86 0.87 6.92 11.89	296 3.01 23.81 15.42	815 8.29 65.57 12.39	2 0.02 0.16 1.02	1243 12.64
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.01 100.00 0.02	0 0.00 0.00 0.00	1 0.01
TOTAL	10 0.10	404 4.11	723 7.35	1919 19.52	6579 66.91	197 2.00	9832 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 8 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	3 0.18 10.71 2.88	6 0.36 21.43 4.58	7 0.41 25.00 1.75	12 0.71 42.86 1.17	0 0.00 0.00 0.00	28 1.66
HSDG	2 0.12 0.17 50.00	81 4.79 6.84 77.88	90 5.33 7.60 68.70	267 15.80 22.55 66.58	726 42.96 61.32 70.55	18 1.07 1.52 85.71	1184 70.06
GED	1 0.06 0.69 25.00	11 0.65 7.64 10.58	9 0.53 6.25 6.87	40 2.37 27.78 9.98	80 4.73 55.56 7.77	3 0.18 2.08 14.29	144 8.52
NNHSG	1 0.06 0.30 25.00	9 0.53 2.70 8.65	26 1.54 7.81 19.85	87 5.15 26.13 21.70	210 12.43 63.06 20.41	0 0.00 0.00 0.00	333 19.70
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.06 100.00 0.10	0 0.00 0.00 0.00	1 0.06
TOTAL	4 0.24	104 6.15	131 7.75	401 23.73	1029 60.89	21 1.24	1690 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 9 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	3 0.31 12.00 3.90	4 0.42 16.00 4.00	9 0.94 36.00 4.76	8 0.84 32.00 1.39	1 0.10 4.00 10.00	25 2.61
HSDG	7 0.73 1.15 100.00	57 5.95 9.38 74.03	62 6.47 10.20 62.00	105 10.96 17.27 55.56	370 38.62 60.86 64.35	7 0.73 1.15 70.00	608 63.47
GED	0 0.00 0.00 0.00	3 0.31 4.84 3.90	9 0.94 14.52 9.00	18 1.88 29.03 9.52	30 3.13 48.39 5.22	2 0.21 3.23 20.00	62 6.47
NNHSG	0 0.00 0.00 0.00	14 1.46 5.32 18.18	25 2.61 9.51 25.00	57 5.95 21.67 30.16	167 17.43 63.50 29.04	0 0.00 0.00 0.00	263 27.45
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	7 0.73	77 8.04	100 10.44	189 19.73	575 60.02	10 1.04	958 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 10 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 50.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	1 50.00
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	1 50.00 100.00 100.00	0 0.00 0.00 .	1 50.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 50.00	0 0.00	0 0.00	1 50.00	0 0.00	2 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 11 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	54 0.12 21.86 8.08	151 0.34 61.13 2.16	25 0.06 10.12 0.38	12 0.03 4.86 0.10	5 0.01 2.02 0.03	0 0.00 0.00 0.00	247 0.56
HSDG	487 1.10 2.98 72.90	3936 8.93 24.08 56.38	2761 6.26 16.89 41.58	3533 8.01 21.62 30.60	5512 12.50 33.72 30.52	116 0.26 0.71 58.29	16345 37.07
GED	55 0.12 1.68 8.23	712 1.61 21.71 10.20	616 1.40 18.79 9.28	977 2.22 29.80 8.46	848 1.92 25.86 4.70	71 0.16 2.17 35.68	3279 7.44
NNHSG	72 0.16 0.30 10.78	2182 4.95 9.01 31.26	3239 7.35 13.37 48.77	7023 15.93 28.99 60.83	11696 26.52 48.28 64.76	12 0.03 0.05 6.03	24224 54.94
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	668 1.51	6981 15.83	6641 15.06	11545 26.18	18061 40.96	199 0.45	44095 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 12 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2	26	20	18	28	2	96
	0.01	0.16	0.12	0.11	0.17	0.01	0.59
	2.08	27.08	20.83	18.75	29.17	2.08	
	11.76	5.07	2.06	0.58	0.24	1.80	
HSDG	10	294	505	1445	6358	100	8712
	0.06	1.80	3.09	8.83	38.86	0.61	53.25
	0.11	3.37	5.80	16.59	72.98	1.15	
	58.82	57.31	52.06	46.58	54.58	90.09	
GED	2	45	76	218	438	8	787
	0.01	0.28	0.46	1.33	2.68	0.05	4.81
	0.25	5.72	9.66	27.70	55.65	1.02	
	11.76	8.77	7.84	7.03	3.76	7.21	
NNHSG	3	148	369	1421	4825	1	6767
	0.02	0.90	2.26	8.68	29.49	0.01	41.36
	0.04	2.19	5.45	21.00	71.30	0.01	
	17.65	28.85	38.04	45.81	41.42	0.90	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	17	513	970	3102	11649	111	16362
	0.10	3.14	5.93	18.96	71.20	0.68	100.00

SEVERAL PERTINENT S[illegible]ISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 13 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	4 0.13 10.81 2.74	3 0.10 8.11 1.34	10 0.34 27.03 1.52	20 0.67 54.05 1.04	0 0.00 0.00 0.00	37 1.24
HSDG	7 0.24 0.53 63.64	76 2.55 5.73 52.05	98 3.29 7.39 43.75	258 8.66 19.46 39.27	877 29.45 66.14 45.46	10 0.34 0.75 90.91	1326 44.53
GED	3 0.10 1.28 27.27	14 0.47 5.96 9.59	26 0.87 11.06 11.61	60 2.01 25.53 9.13	131 4.40 55.74 6.79	1 0.03 0.43 9.09	235 7.89
NNHSG	1 0.03 0.07 9.09	52 1.75 3.77 35.62	97 3.26 7.03 43.30	329 11.05 23.84 50.08	901 30.26 65.29 46.71	0 0.00 0.00 0.00	1380 46.34
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	11 0.37	146 4.90	224 7.52	657 22.06	1929 64.78	11 0.37	2978 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 14 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	7 0.37 33.33 5.26	5 0.26 23.81 2.92	3 0.16 14.29 0.65	6 0.32 28.57 0.54	0 0.00 0.00 0.00	21 1.10
HSDG	3 0.16 0.35 75.00	71 3.73 8.21 53.38	66 3.47 7.63 38.60	187 9.84 21.62 40.30	526 27.67 60.81 47.17	12 0.63 1.39 85.71	865 45.50
GED	0 0.00 0.00 0.00	12 0.63 10.17 9.02	21 1.10 17.80 12.28	38 2.00 32.20 8.19	46 2.42 38.98 4.13	1 0.05 0.85 7.14	118 6.21
NNHSG	1 0.05 0.11 25.00	43 2.26 4.79 32.33	79 4.16 8.81 46.20	236 12.41 26.31 50.86	537 28.25 59.87 48.16	1 0.05 0.11 7.14	897 47.19
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	4 0.21	133 7.00	171 9.00	464 24.41	1115 58.65	14 0.74	1901 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 15 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
HSDG	0 0.00 0.00 .	1 5.56 14.29 100.00	0 0.00 0.00 0.00	2 11.11 28.57 28.57	4 22.22 57.14 57.14	0 0.00 0.00 0.00	7 38.89
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 5.56 100.00 14.29	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 5.56
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	1 5.56 14.29 50.00	3 16.67 42.86 42.86	3 16.67 42.86 42.86	0 0.00 0.00 0.00	7 38.89
UNKNOWN	0 0.00 0.00 .	0 0.00 0.00 0.00	1 5.56 33.33 50.00	1 5.56 33.33 14.29	0 0.00 0.00 0.00	1 5.56 33.33 100.00	3 16.67
TOTAL	0 0.00	1 5.56	2 11.11	7 38.89	7 38.89	1 5.56	18 100.00

SEVERAL PERTINENT S .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 16 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	78 1.87 25.08 20.53	208 5.00 66.88 13.27	18 0.43 5.79 2.69	2 0.05 0.64 0.27	0 0.00 0.00 0.00	5 0.12 1.61 3.05	311 7.47
HSDG	283 6.80 10.47 74.47	1146 27.53 42.38 73.13	434 10.43 16.05 64.97	411 9.87 15.20 55.09	308 7.40 11.39 48.28	122 2.93 4.51 74.39	2704 64.95
GED	7 0.17 2.51 1.84	82 1.97 29.39 5.23	57 1.37 20.43 8.53	63 1.51 22.58 8.45	38 0.91 13.62 5.96	32 0.77 11.47 19.51	279 6.70
NNHSG	12 0.29 1.38 3.16	131 3.15 15.09 8.36	159 3.82 18.32 23.80	270 6.49 31.11 36.19	292 7.01 33.64 45.77	4 0.10 0.46 2.44	868 20.85
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.02 100.00 0.61	1 0.02
TOTAL	380 9.13	1567 37.64	668 16.05	746 17.92	638 15.33	164 3.94	4163 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 17 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	19	7	6	5	1	39
	0.08	1.57	0.58	0.50	0.41	0.08	3.23
	2.56	48.72	17.95	15.38	12.82	2.56	
	20.00	17.43	6.73	2.01	0.82	1.25	
HSDG	4	72	69	210	490	70	915
	0.33	5.96	5.71	17.37	40.53	5.79	75.68
	0.44	7.87	7.54	22.95	53.55	7.65	
	80.00	66.06	66.35	70.23	80.07	87.50	
GED	0	5	6	13	28	6	58
	0.00	0.41	0.50	1.08	2.32	0.50	4.80
	0.00	8.62	10.34	22.41	48.28	10.34	
	0.00	4.59	5.77	4.35	4.58	7.50	
NNHSG	0	13	22	70	89	3	197
	0.00	1.08	1.82	5.79	7.36	0.25	16.29
	0.00	6.60	11.17	35.53	45.18	1.52	
	0.00	11.93	21.15	23.41	14.54	3.75	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	5	109	104	299	612	80	1209
	0.41	9.02	8.60	24.73	50.62	6.62	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 18 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL   TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	6	0	5	4	0	15
	0.00	2.18	0.00	1.82	1.45	0.00	5.45
	0.00	40.00	0.00	33.33	26.67	0.00	
	0.00	17.14	0.00	6.33	3.54	0.00	
HSDG	4	23	15	46	77	9	174
	1.45	8.36	5.45	16.73	28.00	3.27	63.27
	2.30	13.22	8.62	26.44	44.25	5.17	
	100.00	65.71	51.72	58.23	68.14	60.00	
GED	0	3	3	10	8	6	30
	0.00	1.09	1.09	3.64	2.91	2.18	10.91
	0.00	10.00	10.00	33.33	26.67	20.00	
	0.00	8.57	10.34	12.66	7.08	40.00	
NNHSG	0	3	11	18	24	0	56
	0.00	1.09	4.00	6.55	8.73	0.00	20.36
	0.00	5.36	19.64	32.14	42.86	0.00	
	0.00	8.57	37.93	22.78	21.24	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	4	35	29	79	113	15	275
	1.45	12.73	10.55	28.73	41.09	5.45	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 19 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 1.10 16.67 40.00	5 2.76 41.67 16.13	1 0.55 8.33 6.25	3 1.66 25.00 6.25	1 0.55 8.33 1.35	0 0.00 0.00 0.00	12 6.63
HSDG	3 1.66 2.97 60.00	21 11.60 20.79 67.74	8 4.42 7.92 50.00	23 12.71 22.77 47.92	40 22.10 39.60 54.05	6 3.31 5.94 85.71	101 55.80
GED	0 0.00 0.00 0.00	2 1.10 15.38 6.45	0 0.00 0.00 0.00	8 4.42 61.54 16.67	2 1.10 15.38 2.70	1 0.55 7.69 14.29	13 7.18
NNHSG	0 0.00 0.00 0.00	3 1.66 5.45 9.68	7 3.87 12.73 43.75	14 7.73 25.45 29.17	31 17.13 56.36 41.89	0 0.00 0.00 0.00	55 30.39
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	5 2.76	31 17.13	16 8.84	48 26.52	74 40.88	7 3.87	181 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 20 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 .	1 25.00 25.00 100.00	2 50.00 50.00 100.00	1 25.00 25.00 100.00	0 0.00 0.00 .	4 100.00
GED	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	0 0.00	1 25.00	2 50.00	1 25.00	0 0.00	4 100.00

SEVERAL PERTINENT S .STICS FOR TRADOC 17:18 MONDAY, JANL 9, 1989 34
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 21 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=WHITE

EDLVL / FREQUENCY, PERCENT, ROW PCT, COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	6	8	2	0	1	0	17
	0.49	0.66	0.16	0.00	0.08	0.00	1.40
	35.29	47.06	11.76	0.00	5.88	0.00	
	30.00	3.28	1.08	0.00	0.23	0.00	
HSDG	12	178	99	125	169	10	593
	0.99	14.65	8.15	10.29	13.91	0.82	48.81
	2.02	30.02	16.69	21.08	28.50	1.69	
	60.00	72.95	53.51	40.06	38.50	66.67	
GED	2	15	17	27	11	5	77
	0.16	1.23	1.40	2.22	0.91	0.41	6.34
	2.60	19.48	22.08	35.06	14.29	6.49	
	10.00	6.15	9.19	8.65	2.51	33.33	
NNHSG	0	43	67	160	258	0	528
	0.00	3.54	5.51	13.17	21.23	0.00	43.46
	0.00	8.14	12.69	30.30	48.86	0.00	
	0.00	17.62	36.22	51.28	58.77	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	20	244	185	312	439	15	1215
	1.65	20.08	15.23	25.68	36.13	1.23	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 22 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	2	0	3	3	0	8
	0.00	0.32	0.00	0.47	0.47	0.00	1.26
	0.00	25.00	0.00	37.50	37.50	0.00	
	.	10.53	0.00	2.63	0.67	0.00	
HSDG	0	14	28	64	307	6	419
	0.00	2.21	4.42	10.11	48.50	0.95	66.19
	0.00	3.34	6.68	15.27	73.27	1.43	
	.	73.68	63.64	56.14	68.37	85.71	
GED	0	0	2	3	8	1	14
	0.00	0.00	0.32	0.47	1.26	0.16	2.21
	0.00	0.00	14.29	21.43	57.14	7.14	
	.	0.00	4.55	2.63	1.78	14.29	
NNHSG	0	3	14	44	131	0	192
	0.00	0.47	2.21	6.95	20.70	0.00	30.33
	0.00	1.56	7.29	22.92	68.23	0.00	
	.	15.79	31.82	38.60	29.18	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	0.00	
TOTAL	0	19	44	114	449	7	633
	0.00	3.00	6.95	18.01	70.93	1.11	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 23 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	1 0.85 33.33 20.00	1 0.85 33.33 12.50	1 0.85 33.33 3.45	0 0.00 0.00 0.00	0 0.00 0.00 .	3 2.56
HSDG	0 0.00 0.00 0.00	2 1.71 3.70 40.00	5 4.27 9.26 62.50	8 6.84 14.81 27.59	39 33.33 72.22 52.70	0 0.00 0.00 .	54 46.15
GED	1 0.85 7.69 100.00	0 0.00 0.00 0.00	1 0.85 7.69 12.50	5 4.27 38.46 17.24	6 5.13 46.15 8.11	0 0.00 0.00 .	13 11.11
NNHSG	0 0.00 0.00 0.00	2 1.71 4.26 40.00	1 0.85 2.13 12.50	15 12.82 31.91 51.72	29 24.79 61.70 39.19	0 0.00 0.00 .	47 40.17
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	1 0.85	5 4.27	8 6.84	29 24.79	74 63.25	0 0.00	117 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 24 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	1	0	0	0	0	1
	0.00	1.49	0.00	0.00	0.00	0.00	1.49
	0.00	100.00	0.00	0.00	0.00	0.00	
	.	10.00	0.00	0.00	0.00	0.00	
HSDG	0	6	3	4	22	1	36
	0.00	8.96	4.48	5.97	32.84	1.49	53.73
	0.00	16.67	8.33	11.11	61.11	2.78	
	.	60.00	60.00	26.67	61.11	100.00	
GED	0	0	0	2	3	0	5
	0.00	0.00	0.00	2.99	4.48	0.00	7.46
	0.00	0.00	0.00	40.00	60.00	0.00	
	.	0.00	0.00	13.33	8.33	0.00	
NNHSG	0	3	2	9	11	0	25
	0.00	4.48	2.99	13.43	16.42	0.00	37.31
	0.00	12.00	8.00	36.00	44.00	0.00	
	.	30.00	40.00	60.00	30.56	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	0.00	
TOTAL	0	10	5	15	36	1	67
	0.00	14.93	7.46	22.39	53.73	1.49	100.00

SEVERAL PERTINENT S .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 25 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
GED	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	0 0.00	1 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 1 OF SPSTT BY TSC44
CONTROLLING FOR PS=NPS

SPSTT TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	1190 0.76 1.71 48.28	10265 6.53 14.78 47.21	8666 5.51 12.48 44.80	14845 9.44 21.38 42.05	34393 21.88 49.54 44.00	71 0.05 0.10 38.17	69430 44.16
REUP	365 0.23 1.87 14.81	2857 1.82 14.65 13.14	2335 1.49 11.97 12.07	4122 2.62 21.13 11.68	9801 6.23 50.24 12.54	27 0.02 0.14 14.52	19507 12.41
ATTRIT	598 0.38 0.97 24.26	7004 4.46 11.35 32.21	7435 4.73 12.05 38.44	14878 9.46 24.10 42.14	31728 20.18 51.40 40.59	79 0.05 0.13 42.47	61722 39.26
STILL IN	294 0.19 6.33 11.93	1370 0.87 29.48 6.30	688 0.44 14.81 3.56	1013 0.64 21.80 2.87	1278 0.81 27.50 1.63	4 0.00 0.09 2.15	4647 2.96
BAD DATA	18 0.01 0.94 0.73	249 0.16 13.07 1.15	219 0.14 11.50 1.13	447 0.28 23.46 1.27	967 0.62 50.76 1.24	5 0.00 0.26 2.69	1905 1.21
TOTAL	2465 1.57	21745 13.83	19343 12.30	35305 22.46	78167 49.72	186 0.12	157211 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 2 OF SPSTT BY TSC44
CONTROLLING FOR PS=PS

SPSTT / TSC44 — FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	234 1.57 4.03 36.00	1261 8.45 21.73 35.65	883 5.91 15.21 39.53	1227 8.22 21.14 39.25	1546 10.36 26.64 41.27	653 4.37 11.25 39.91	5804 38.88
REUP	211 1.41 5.05 32.46	1105 7.40 26.44 31.24	625 4.19 14.95 27.98	817 5.47 19.55 26.14	976 6.54 23.35 26.05	446 2.99 10.67 27.26	4180 28.00
ATTRIT	102 0.68 2.81 15.69	770 5.16 21.20 21.77	573 3.84 15.78 25.65	897 6.01 24.70 28.69	1033 6.92 28.44 27.58	257 1.72 7.08 15.71	3632 24.33
STILL IN	100 0.67 8.44 15.38	372 2.49 31.39 10.52	130 0.87 10.97 5.82	161 1.08 13.59 5.15	160 1.07 13.50 4.27	262 1.75 22.11 16.01	1185 7.94
BAD DATA	3 0.02 2.34 0.46	29 0.19 22.66 0.82	23 0.15 17.97 1.03	24 0.16 18.75 0.77	31 0.21 24.22 0.83	18 0.12 14.06 1.10	128 0.86
TOTAL	650 4.35	3537 23.69	2234 14.96	3126 20.94	3746 25.09	1636 10.96	14929 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 1 OF SPSTT BY MC44
CONTROLLING FOR PS=NPS

SPSTT / FREQUENCY / PERCENT / ROW PCT / COL PCT	MC44: I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	20121	14845	34393	71	69430
	12.80	9.44	21.88	0.05	44.16
	28.98	21.38	49.54	0.10	
	46.20	42.05	44.00	38.17	
REUP	5557	4122	9801	27	19507
	3.53	2.62	6.23	0.02	12.41
	28.49	21.13	50.24	0.14	
	12.76	11.68	12.54	14.52	
ATTRIT	15037	14878	31728	79	61722
	9.56	9.46	20.18	0.05	39.26
	24.36	24.10	51.40	0.13	
	34.53	42.14	40.59	42.47	
STILL IN	2352	1013	1278	4	4647
	1.50	0.64	0.81	0.00	2.96
	50.61	21.80	27.50	0.09	
	5.40	2.87	1.63	2.15	
BAD DATA	486	447	967	5	1905
	0.31	0.28	0.62	0.00	1.21
	25.51	23.46	50.76	0.26	
	1.12	1.27	1.24	2.69	
TOTAL	43553	35305	78167	186	157211
	27.70	22.46	49.72	0.12	100.00

SEVERAL PERTINENT S[illegible]ISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 2 OF SPSTT BY MC44
CONTROLLING FOR PS=PS

SPSTT MC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	2378 15.93 40.97 37.03	1227 8.22 21.14 39.25	1546 10.36 26.64 41.27	653 4.37 11.25 39.91	5804 38.88
REUP	1941 13.00 46.44 30.23	817 5.47 19.55 26.14	976 6.54 23.35 26.05	446 2.99 10.67 27.26	4180 28.00
ATTRIT	1445 9.68 39.79 22.50	897 6.01 24.70 28.69	1033 6.92 28.44 27.58	257 1.72 7.08 15.71	3632 24.33
STILL IN	602 4.03 50.80 9.38	161 1.08 13.59 5.15	160 1.07 13.50 4.27	262 1.75 22.11 16.01	1185 7.94
BAD DATA	55 0.37 42.97 0.86	24 0.16 18.75 0.77	31 0.21 24.22 0.83	18 0.12 14.06 1.10	128 0.86
TOTAL	6421 43.01	3126 20.94	3746 25.09	1636 10.96	14929 100.00

SEVERAL PERTINENT S...ISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 1 OF SPSTT BY EDLVL
CONTROLLING FOR PS=NPS

SPSTT / EDLVL FREQUENCY PERCENT ROW PCT COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	602 0.38 0.87 39.17	40413 25.71 58.21 48.03	2179 1.39 3.14 37.27	26229 16.68 37.78 39.94	7 0.00 0.01 70.00	69430 44.16
REUP	250 0.16 1.28 16.27	14345 9.12 73.54 17.05	596 0.38 3.06 10.20	4314 2.74 22.12 6.57	2 0.00 0.01 20.00	19507 12.41
ATTRIT	353 0.22 0.57 22.97	25327 16.11 41.03 30.10	2856 1.82 4.63 48.85	33185 21.11 53.77 50.53	1 0.00 0.00 10.00	61722 39.26
STILL IN	305 0.19 6.56 19.84	3036 1.93 65.33 3.61	154 0.10 3.31 2.63	1152 0.73 24.79 1.75	0 0.00 0.00 0.00	4647 2.96
BAD DATA	27 0.02 1.42 1.76	1025 0.65 53.81 1.22	61 0.04 3.20 1.04	792 0.50 41.57 1.21	0 0.00 0.00 0.00	1905 1.21
TOTAL	1537 0.98	84146 53.52	5846 3.72	65672 41.77	10 0.01	157211 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 2 OF SPSTT BY EDLVL
CONTROLLING FOR PS=PS

SPSTT EDLVL

FREQUENCY / PERCENT / ROW PCT / COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	116	3687	1838	158	5	5804
	0.78	24.70	12.31	1.06	0.03	38.88
	2.00	63.53	31.67	2.72	0.09	
	34.32	38.35	39.76	45.93	55.56	
REUP	100	3061	947	71	1	4180
	0.67	20.50	6.34	0.48	0.01	28.00
	2.39	73.23	22.66	1.70	0.02	
	29.59	31.84	20.48	20.64	11.11	
ATTRIT	48	1928	1564	90	2	3632
	0.32	12.91	10.48	0.60	0.01	24.33
	1.32	53.08	43.06	2.48	0.06	
	14.20	20.05	33.83	26.16	22.22	
STILL IN	72	862	226	24	1	1185
	0.48	5.77	1.51	0.16	0.01	7.94
	6.08	72.74	19.07	2.03	0.08	
	21.30	8.97	4.89	6.98	11.11	
BAD DATA	2	77	48	1	0	128
	0.01	0.52	0.32	0.01	0.00	0.86
	1.56	60.16	37.50	0.78	0.00	
	0.59	0.80	1.04	0.29	0.00	
TOTAL	338	9615	4623	344	9	14929
	2.26	64.40	30.97	2.30	0.06	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 1 OF SPSTT BY HSGRAD
CONTROLLING FOR PS=NPS

SPSTT HSGRAD

FREQUENCY PERCENT ROW PCT COL PCT	HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	41015 26.09 59.07 47.87	28408 18.07 40.92 39.72	7 0.00 0.01 70.00	69430 44.16
REUP	14595 9.28 74.82 17.03	4910 3.12 25.17 6.87	2 0.00 0.01 20.00	19507 12.41
ATTRIT	25680 16.33 41.61 29.97	36041 22.93 58.39 50.39	1 0.00 0.00 10.00	61722 39.26
STILL IN	3341 2.13 71.90 3.90	1306 0.83 28.10 1.83	0 0.00 0.00 0.00	4647 2.96
BAD DATA	1052 0.67 55.22 1.23	853 0.54 44.78 1.19	0 0.00 0.00 0.00	1905 1.21
TOTAL	85683 54.50	71518 45.49	10 0.01	157211 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 2 OF SPSTT BY HSGRAD
CONTROLLING FOR PS=PS

SPSTT HSGRAD

FREQUENCY PERCENT ROW PCT COL PCT	HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	3803 25.47 65.52 38.21	1996 13.37 34.39 40.19	5 0.03 0.09 55.56	5804 38.88
REUP	3161 21.17 75.62 31.76	1018 6.82 24.35 20.50	1 0.01 0.02 11.11	4180 28.00
ATTRIT	1976 13.24 54.41 19.85	1654 11.08 45.54 33.30	2 0.01 0.06 22.22	3632 24.33
STILL IN	934 6.26 78.82 9.38	250 1.67 21.10 5.03	1 0.01 0.08 11.11	1185 7.94
BAD DATA	79 0.53 61.72 0.79	49 0.33 38.28 0.99	0 0.00 0.00 0.00	128 0.86
TOTAL	9953 66.67	4967 33.27	9 0.06	14929 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 1 OF SPSTT BY RETHGP
CONTROLLING FOR PS=NPS

SPSTT RETHGP

FREQUENCY / PERCENT / ROW PCT / COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	41672	20891	4269	2588	10	69430
	26.51	13.29	2.72	1.65	0.01	44.16
	60.02	30.09	6.15	3.73	0.01	
	43.28	44.82	48.38	47.43	37.04	
REUP	8651	8628	1385	841	2	19507
	5.50	5.49	0.88	0.53	0.00	12.41
	44.35	44.23	7.10	4.31	0.01	
	8.98	18.51	15.70	15.41	7.41	
ATTRIT	41512	15550	2834	1814	12	61722
	26.41	9.89	1.80	1.15	0.01	39.26
	67.26	25.19	4.59	2.94	0.02	
	43.11	33.36	32.12	33.25	44.44	
STILL IN	3331	938	227	149	2	4647
	2.12	0.60	0.14	0.09	0.00	2.96
	71.68	20.19	4.88	3.21	0.04	
	3.46	2.01	2.57	2.73	7.41	
BAD DATA	1125	607	108	64	1	1905
	0.72	0.39	0.07	0.04	0.00	1.21
	59.06	31.86	5.67	3.36	0.05	
	1.17	1.30	1.22	1.17	3.70	
TOTAL	96291	46614	8823	5456	27	157211
	61.25	29.65	5.61	3.47	0.02	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 2 OF SPSTT BY RETHGP
CONTROLLING FOR PS=PS

SPSTT / RETHGP FREQUENCY PERCENT ROW PCT COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	3732 25.00 64.30 38.12	1606 10.76 27.67 40.98	316 2.12 5.44 38.44	143 0.96 2.46 37.43	7 0.05 0.12 46.67	5804 38.88
REUP	2554 17.11 61.10 26.09	1204 8.06 28.80 30.72	305 2.04 7.30 37.10	117 0.78 2.80 30.63	0 0.00 0.00 0.00	4180 28.00
ATTRIT	2583 17.30 71.12 26.38	812 5.44 22.36 20.72	144 0.96 3.96 17.52	87 0.58 2.40 22.77	6 0.04 0.17 40.00	3632 24.33
STILL IN	832 5.57 70.21 8.50	271 1.82 22.87 6.92	48 0.32 4.05 5.84	32 0.21 2.70 8.38	2 0.01 0.17 13.33	1185 7.94
BAD DATA	90 0.60 70.31 0.92	26 0.17 20.31 0.66	9 0.06 7.03 1.09	3 0.02 2.34 0.79	0 0.00 0.00 0.00	128 0.86
TOTAL	9791 65.58	3919 26.25	822 5.51	382 2.56	15 0.10	14929 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 1 OF SPSTT BY SEX
CONTROLLING FOR PS=NPS

SPSTT SEX

FREQUENCY PERCENT ROW PCT COL PCT	UNKNOWN	MALE	FEMALE	TOTAL
ETS	5 0.00 0.01 45.45	61578 39.17 88.69 45.62	7847 4.99 11.30 35.30	69430 44.16
REUP	1 0.00 0.01 9.09	16307 10.37 83.60 12.08	3199 2.03 16.40 14.39	19507 12.41
ATTRIT	4 0.00 0.01 36.36	51421 32.71 83.31 38.10	10297 6.55 16.68 46.33	61722 39.26
STILL IN	1 0.00 0.02 9.09	4131 2.63 88.90 3.06	515 0.33 11.08 2.32	4647 2.96
BAD DATA	0 0.00 0.00 0.00	1536 0.98 80.63 1.14	369 0.23 19.37 1.66	1905 1.21
TOTAL	11 0.01	134973 85.85	22227 14.14	157211 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 2 OF SPSTT BY SEX
CONTROLLING FOR PS=PS

SPSTT / FREQUENCY / PERCENT / ROW PCT / COL PCT	SEX: UNKNOWN	MALE	FEMALE	TOTAL
ETS	7	5280	517	5804
	0.05	35.37	3.46	38.88
	0.12	90.97	8.91	
	58.33	39.01	37.38	
REUP	1	3853	326	4180
	0.01	25.81	2.18	28.00
	0.02	92.18	7.80	
	8.33	28.47	23.57	
ATTRIT	3	3174	455	3632
	0.02	21.26	3.05	24.33
	0.08	87.39	12.53	
	25.00	23.45	32.90	
STILL IN	1	1118	66	1185
	0.01	7.49	0.44	7.94
	0.08	94.35	5.57	
	8.33	8.26	4.77	
BAD DATA	0	109	19	128
	0.00	0.73	0.13	0.86
	0.00	85.16	14.84	
	0.00	0.81	1.37	
TOTAL	12	13534	1383	14929
	0.08	90.66	9.26	100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	94 0.23 25.75 8.25	214 0.51 58.63 2.32	36 0.09 9.86 0.51	13 0.03 3.56 0.13	7 0.02 1.92 0.05	1 0.00 0.27 9.09	365 0.88
HSDG	932 2.24 4.18 81.83	6711 16.10 30.07 72.61	4086 9.81 18.31 58.20	4606 11.05 20.64 45.35	5980 14.35 26.79 42.41	6 0.01 0.03 54.55	22321 53.56
GED	28 0.07 1.99 2.46	370 0.89 26.28 4.00	314 0.75 22.30 4.47	349 0.84 24.79 3.44	346 0.83 24.57 2.45	1 0.00 0.07 9.09	1408 3.38
NNHSG	85 0.20 0.48 7.46	1946 4.67 11.07 21.06	2585 6.20 14.71 36.82	5189 12.45 29.53 51.09	7765 18.63 44.19 55.06	3 0.01 0.02 27.27	17573 42.17
UNKNOWN	0 0.00 0.00 0.00	1 0.00 20.00 0.01	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.01 80.00 0.03	0 0.00 0.00 0.00	5 0.01
TOTAL	1139 2.73	9242 22.18	7021 16.85	10157 24.37	14102 33.84	11 0.03	41672 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.00 0.66 5.00	35 0.17 23.03 5.88	30 0.14 19.74 2.72	42 0.20 27.63 1.26	44 0.21 28.95 0.28	0 0.00 0.00 0.00	152 0.73
HSDG	15 0.07 0.11 75.00	403 1.93 2.82 67.73	717 3.43 5.02 65.06	1970 9.43 13.80 58.98	11127 53.26 77.93 70.48	46 0.22 0.32 97.87	14278 68.35
GED	0 0.00 0.00 0.00	28 0.13 6.10 4.71	44 0.21 9.59 3.99	146 0.70 31.81 4.37	241 1.15 52.51 1.53	0 0.00 0.00 0.00	459 2.20
NNHSG	4 0.02 0.07 20.00	129 0.62 2.15 21.68	311 1.49 5.18 28.22	1182 5.66 19.70 35.39	4374 20.94 72.89 27.71	1 0.00 0.02 2.13	6001 28.73
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00 100.00 0.01	0 0.00 0.00 0.00	1 0.00
TOTAL	20 0.10	595 2.85	1102 5.27	3340 15.99	15787 75.57	47 0.22	20891 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	5	4	16	21	0	46
	0.00	0.12	0.09	0.37	0.49	0.00	1.08
	0.00	10.87	8.70	34.78	45.65	0.00	
	0.00	2.49	1.23	1.90	0.73	0.00	
HSDG	7	139	176	404	1641	7	2374
	0.16	3.26	4.12	9.46	38.44	0.16	55.61
	0.29	5.86	7.41	17.02	69.12	0.29	
	100.00	69.15	54.32	48.04	56.80	100.00	
GED	0	12	21	50	143	0	226
	0.00	0.28	0.49	1.17	3.35	0.00	5.29
	0.00	5.31	9.29	22.12	63.27	0.00	
	0.00	5.97	6.48	5.95	4.95	0.00	
NNHSG	0	45	123	371	1083	0	1622
	0.00	1.05	2.88	8.69	25.37	0.00	37.99
	0.00	2.77	7.58	22.87	66.77	0.00	
	0.00	22.39	37.96	44.11	37.49	0.00	
UNKNOWN	0	0	0	0	1	0	1
	0.00	0.00	0.00	0.00	0.02	0.00	0.02
	0.00	0.00	0.00	0.00	100.00	0.00	
	0.00	0.00	0.00	0.00	0.03	0.00	
TOTAL	7	201	324	841	2889	7	4269
	0.16	4.71	7.59	19.70	67.67	0.16	100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	14	4	12	8	0	39
	0.04	0.54	0.15	0.46	0.31	0.00	1.51
	2.56	35.90	10.26	30.77	20.51	0.00	
	4.17	6.17	1.83	2.37	0.50	0.00	
HSDG	21	137	129	218	924	5	1434
	0.81	5.29	4.98	8.42	35.70	0.19	55.41
	1.46	9.55	9.00	15.20	64.44	0.35	
	87.50	60.35	58.90	43.00	57.53	100.00	
GED	2	18	15	19	31	0	85
	0.08	0.70	0.58	0.73	1.20	0.00	3.28
	2.35	21.18	17.65	22.35	36.47	0.00	
	8.33	7.93	6.85	3.75	1.93	0.00	
NNHSG	0	58	71	258	643	0	1030
	0.00	2.24	2.74	9.97	24.85	0.00	39.80
	0.00	5.63	6.89	25.05	62.43	0.00	
	0.00	25.55	32.42	50.89	40.04	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	24	227	219	507	1606	5	2588
	0.93	8.77	8.46	19.59	62.06	0.19	100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	5 50.00 83.33 55.56	1 10.00 16.67 100.00	6 60.00
GED	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 10.00 100.00 11.11	0 0.00 0.00 0.00	1 10.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	3 30.00 100.00 33.33	0 0.00 0.00 0.00	3 30.00
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	0 0.00	0 0.00	0 0.00	9 90.00	1 10.00	10 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 6 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	31 0.36 28.97 8.83	62 0.72 57.94 2.57	9 0.10 8.41 0.57	3 0.03 2.80 0.15	2 0.02 1.87 0.09	0 0.00 0.00 0.00	107 1.24
HSDG	290 3.35 5.05 82.62	1894 21.89 33.00 78.59	1078 12.46 18.78 68.49	1190 13.76 20.73 59.53	1284 14.84 22.37 55.51	4 0.05 0.07 100.00	5740 66.35
GED	6 0.07 1.94 1.71	106 1.23 34.19 4.40	64 0.74 20.65 4.07	68 0.79 21.94 3.40	66 0.76 21.29 2.85	0 0.00 0.00 0.00	310 3.58
NNHSG	24 0.28 0.96 6.84	348 4.02 13.95 14.44	423 4.89 16.96 26.87	738 8.53 29.59 36.92	961 11.11 38.53 41.55	0 0.00 0.00 0.00	2494 28.83
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	351 4.06	2410 27.86	1574 18.19	1999 23.11	2313 26.74	4 0.05	8651 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 7 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=BLACK

EDLVL / TSC44 (FREQUENCY / PERCENT / ROW PCT / COL PCT)	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	14 0.16 13.46 4.44	24 0.28 23.08 4.13	29 0.34 27.88 1.77	37 0.43 35.58 0.61	0 0.00 0.00 0.00	104 1.21
HSDG	5 0.06 0.07 100.00	247 2.86 3.47 78.41	457 5.30 6.43 78.66	1267 14.68 17.82 77.44	5112 59.25 71.89 84.25	23 0.27 0.32 100.00	7111 82.42
GED	0 0.00 0.00 0.00	13 0.15 7.14 4.13	18 0.21 9.89 3.10	48 0.56 26.37 2.93	103 1.19 56.59 1.70	0 0.00 0.00 0.00	182 2.11
NNHSG	0 0.00 0.00 0.00	41 0.48 3.33 13.02	82 0.95 6.67 14.11	292 3.38 23.74 17.85	815 9.45 66.26 13.43	0 0.00 0.00 0.00	1230 14.26
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.01 100.00 0.02	0 0.00 0.00 0.00	1 0.01
TOTAL	5 0.06	315 3.65	581 6.73	1636 18.96	6068 70.33	23 0.27	8628 100.00

SEVERAL PERTINENT S .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 8 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	1 0.07 5.56 1.37	4 0.29 22.22 4.12	2 0.14 11.11 0.62	11 0.79 61.11 1.24	0 0.00 0.00 .	18 1.30
HSDG	1 0.07 0.10 33.33	58 4.19 5.99 79.45	65 4.69 6.71 67.01	214 15.45 22.11 66.05	630 45.49 65.08 70.95	0 0.00 0.00 .	968 69.89
GED	1 0.07 1.47 33.33	6 0.43 8.82 8.22	3 0.22 4.41 3.09	21 1.52 30.88 6.48	37 2.67 54.41 4.17	0 0.00 0.00 .	68 4.91
NNHSG	1 0.07 0.30 33.33	8 0.58 2.42 10.96	25 1.81 7.58 25.77	87 6.28 26.36 26.85	209 15.09 63.33 23.54	0 0.00 0.00 .	330 23.83
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.07 100.00 0.11	0 0.00 0.00 .	1 0.07
TOTAL	3 0.22	73 5.27	97 7.00	324 23.39	888 64.12	0 0.00	1385 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 9 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	2	4	8	7	0	21
	0.00	0.24	0.48	0.95	0.83	0.00	2.50
	0.00	9.52	19.05	38.10	33.33	0.00	
	0.00	3.45	4.82	4.91	1.32	.	
HSDG	6	41	47	86	345	0	525
	0.71	4.88	5.59	10.23	41.02	0.00	62.43
	1.14	7.81	8.95	16.38	65.71	0.00	
	100.00	70.69	56.63	52.76	64.97	.	
GED	0	1	7	14	13	0	35
	0.00	0.12	0.83	1.66	1.55	0.00	4.16
	0.00	2.86	20.00	40.00	37.14	0.00	
	0.00	1.72	8.43	8.59	2.45	.	
NNHSG	0	14	25	55	166	0	260
	0.00	1.66	2.97	6.54	19.74	0.00	30.92
	0.00	5.38	9.62	21.15	63.85	0.00	
	0.00	24.14	30.12	33.74	31.26	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	6	58	83	163	531	0	841
	0.71	6.90	9.87	19.38	63.14	0.00	100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 10 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 50.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	1 50.00
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	1 50.00 100.00 100.00	0 0.00 0.00 .	1 50.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 50.00	0 0.00	0 0.00	1 50.00	0 0.00	2 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 11 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	50	123	25	10	5	0	213
	0.12	0.30	0.06	0.02	0.01	0.00	0.51
	23.47	57.75	11.74	4.69	2.35	0.00	
	8.76	1.96	0.40	0.09	0.03	0.00	
HSDG	412	3497	2524	3313	5313	17	15076
	0.99	8.42	6.08	7.98	12.80	0.04	36.32
	2.73	23.20	16.74	21.98	35.24	0.11	
	72.15	55.67	40.87	30.28	30.33	73.91	
GED	41	499	405	616	510	0	2071
	0.10	1.20	0.98	1.48	1.23	0.00	4.99
	1.98	24.09	19.56	29.74	24.63	0.00	
	7.18	7.94	6.56	5.63	2.91	0.00	
NNHSG	68	2163	3222	7001	11692	6	24152
	0.16	5.21	7.76	16.87	28.17	0.01	58.18
	0.28	8.96	13.34	28.99	48.41	0.02	
	11.91	34.43	52.17	63.99	66.74	26.09	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	571	6282	6176	10940	17520	23	41512
	1.38	15.13	14.88	26.35	42.20	0.06	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 12 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	22	19	18	27	0	87
	0.01	0.14	0.12	0.12	0.17	0.00	0.56
	1.15	25.29	21.84	20.69	31.03	0.00	
	7.14	4.73	2.13	0.62	0.24	0.00	
HSDG	9	260	455	1314	6106	44	8188
	0.06	1.67	2.93	8.45	39.27	0.28	52.66
	0.11	3.18	5.56	16.05	74.57	0.54	
	64.29	55.91	51.12	45.51	54.28	97.78	
GED	1	35	53	140	291	0	520
	0.01	0.23	0.34	0.90	1.87	0.00	3.34
	0.19	6.73	10.19	26.92	55.96	0.00	
	7.14	7.53	5.96	4.85	2.59	0.00	
NNHSG	3	148	363	1415	4825	1	6755
	0.02	0.95	2.33	9.10	31.03	0.01	43.44
	0.04	2.19	5.37	20.95	71.43	0.01	
	21.43	31.83	40.79	49.01	42.89	2.22	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	14	465	890	2887	11249	45	15550
	0.09	2.99	5.72	18.57	72.34	0.29	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 13 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	4	3	9	18	0	34
	0.00	0.14	0.11	0.32	0.64	0.00	1.20
	0.00	11.76	8.82	26.47	52.94	0.00	
	0.00	2.96	1.44	1.48	0.96	0.00	
HSDG	6	68	91	230	847	5	1247
	0.21	2.40	3.21	8.12	29.89	0.18	44.00
	0.48	5.45	7.30	18.44	67.92	0.40	
	60.00	50.37	43.54	37.77	45.39	100.00	
GED	3	11	19	42	100	0	175
	0.11	0.39	0.67	1.48	3.53	0.00	6.18
	1.71	6.29	10.86	24.00	57.14	0.00	
	30.00	8.15	9.09	6.90	5.36	0.00	
NNHSG	1	52	96	328	901	0	1378
	0.04	1.83	3.39	11.57	31.79	0.00	48.62
	0.07	3.77	6.97	23.80	65.38	0.00	
	10.00	38.52	45.93	53.86	48.29	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	10	135	209	609	1866	5	2834
	0.35	4.76	7.37	21.49	65.84	0.18	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 14 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	6 0.33 31.58 4.92	5 0.28 26.32 3.14	3 0.17 15.79 0.69	5 0.28 26.32 0.46	0 0.00 0.00 0.00	19 1.05
HSDG	2 0.11 0.25 66.67	64 3.53 7.88 52.46	60 3.31 7.39 37.74	172 9.48 21.18 39.36	509 28.06 62.68 46.78	5 0.28 0.62 100.00	812 44.76
GED	0 0.00 0.00 0.00	9 0.50 10.11 7.38	16 0.88 17.98 10.06	27 1.49 30.34 6.18	37 2.04 41.57 3.40	0 0.00 0.00 0.00	89 4.91
NNHSG	1 0.06 0.11 33.33	43 2.37 4.81 35.25	78 4.30 8.72 49.06	235 12.95 26.29 53.78	537 29.60 60.07 49.36	0 0.00 0.00 0.00	894 49.28
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	3 0.17	122 6.73	159 8.77	437 24.09	1088 59.98	5 0.28	1814 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 15 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=UNKNOWN

EDLVL TSC44

EDLVL / FREQUENCY, PERCENT, ROW PCT, COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	.	0.00	0.00	0.00	0.00	
HSDG	0	0	0	1	3	0	4
	0.00	0.00	0.00	8.33	25.00	0.00	33.33
	0.00	0.00	0.00	25.00	75.00	0.00	
	.	.	0.00	20.00	60.00	0.00	
GED	0	0	0	1	0	0	1
	0.00	0.00	0.00	8.33	0.00	0.00	8.33
	0.00	0.00	0.00	100.00	0.00	0.00	
	.	.	0.00	20.00	0.00	0.00	
NNHSG	0	0	1	3	2	0	6
	0.00	0.00	8.33	25.00	16.67	0.00	50.00
	0.00	0.00	16.67	50.00	33.33	0.00	
	.	.	100.00	60.00	40.00	0.00	
UNKNOWN	0	0	0	0	0	1	1
	0.00	0.00	0.00	0.00	0.00	8.33	8.33
	0.00	0.00	0.00	0.00	0.00	100.00	
	.	.	0.00	0.00	0.00	100.00	
TOTAL	0	0	1	5	5	1	12
	0.00	0.00	8.33	41.67	41.67	8.33	100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 16 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT		I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	FREQUENCY	61	171	15	2	0	0	249
	PERCENT	1.83	5.13	0.45	0.06	0.00	0.00	7.48
	ROW PCT	24.50	68.67	6.02	0.80	0.00	0.00	
	COL PCT	21.55	13.88	2.66	0.30	0.00	0.00	
HSDG	FREQUENCY	208	902	369	365	279	2	2125
	PERCENT	6.24	27.08	11.08	10.96	8.38	0.06	63.79
	ROW PCT	9.79	42.45	17.36	17.18	13.13	0.09	
	COL PCT	73.50	73.21	65.54	54.80	47.69	100.00	
GED	FREQUENCY	4	34	27	29	14	0	108
	PERCENT	0.12	1.02	0.81	0.87	0.42	0.00	3.24
	ROW PCT	3.70	31.48	25.00	26.85	12.96	0.00	
	COL PCT	1.41	2.76	4.80	4.35	2.39	0.00	
NNHSG	FREQUENCY	10	125	152	270	292	0	849
	PERCENT	0.30	3.75	4.56	8.11	8.77	0.00	25.49
	ROW PCT	1.18	14.72	17.90	31.80	34.39	0.00	
	COL PCT	3.53	10.15	27.00	40.54	49.91	0.00	
UNKNOWN	FREQUENCY	0	0	0	0	0	0	0
	PERCENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ROW PCT	.	.	.	.	.	.	
	COL PCT	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL		283	1232	563	666	585	2	3331
		8.50	36.99	16.90	19.99	17.56	0.06	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 17 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=BLACK

EDLVL   TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.11 3.13 25.00	17 1.81 53.13 19.77	5 0.53 15.63 5.88	5 0.53 15.63 2.07	4 0.43 12.50 0.77	0 0.00 0.00 0.00	32 3.41
HSDG	3 0.32 0.44 75.00	53 5.65 7.69 61.63	54 5.76 7.84 63.53	161 17.16 23.37 66.80	417 44.46 60.52 80.19	1 0.11 0.15 50.00	689 73.45
GED	0 0.00 0.00 0.00	3 0.32 13.04 3.49	5 0.53 21.74 5.88	5 0.53 21.74 2.07	10 1.07 43.48 1.92	0 0.00 0.00 0.00	23 2.45
NNHSG	0 0.00 0.00 0.00	13 1.39 6.70 15.12	21 2.24 10.82 24.71	70 7.46 36.08 29.05	89 9.49 45.88 17.12	1 0.11 0.52 50.00	194 20.68
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	4 0.43	86 9.17	85 9.06	241 25.69	520 55.44	2 0.21	938 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 18 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL	TSC44						
FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	5	0	3	4	0	12
	0.00	2.20	0.00	1.32	1.76	0.00	5.29
	0.00	41.67	0.00	25.00	33.33	0.00	
	0.00	17.86	0.00	4.29	3.88	.	
HSDG	2	18	12	42	69	0	143
	0.88	7.93	5.29	18.50	30.40	0.00	63.00
	1.40	12.59	8.39	29.37	48.25	0.00	
	100.00	64.29	50.00	60.00	66.99	.	
GED	0	2	2	8	6	0	18
	0.00	0.88	0.88	3.52	2.64	0.00	7.93
	0.00	11.11	11.11	44.44	33.33	0.00	
	0.00	7.14	8.33	11.43	5.83	.	
NNHSG	0	3	10	17	24	0	54
	0.00	1.32	4.41	7.49	10.57	0.00	23.79
	0.00	5.56	18.52	31.48	44.44	0.00	
	0.00	10.71	41.67	24.29	23.30	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	2	28	24	70	103	0	227
	0.88	12.33	10.57	30.84	45.37	0.00	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 19 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 1.34 16.67 40.00	5 3.36 41.67 20.83	1 0.67 8.33 6.67	3 2.01 25.00 8.57	1 0.67 8.33 1.43	0 0.00 0.00 .	12 8.05
HSDG	3 2.01 3.90 60.00	15 10.07 19.48 62.50	7 4.70 9.09 46.67	16 10.74 20.78 45.71	36 24.16 46.75 51.43	0 0.00 0.00 .	77 51.68
GED	0 0.00 0.00 0.00	1 0.67 20.00 4.17	0 0.00 0.00 0.00	2 1.34 40.00 5.71	2 1.34 40.00 2.86	0 0.00 0.00 .	5 3.36
NNHSG	0 0.00 0.00 0.00	3 2.01 5.45 12.50	7 4.70 12.73 46.67	14 9.40 25.45 40.00	31 20.81 56.36 44.29	0 0.00 0.00 .	55 36.91
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	5 3.36	24 16.11	15 10.07	35 23.49	70 46.98	0 0.00	149 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 20 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 .	1 50.00 50.00 100.00	1 50.00 50.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	2 100.00
GED	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	0 0.00	1 50.00	1 50.00	0 0.00	0 0.00	2 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 21 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	6 0.53 35.29 33.33	8 0.71 47.06 3.67	2 0.18 11.76 1.20	0 0.00 0.00 0.00	1 0.09 5.88 0.23	0 0.00 0.00 .	17 1.51
HSDG	10 0.89 1.85 55.56	158 14.04 29.21 72.48	90 8.00 16.64 54.22	120 10.67 22.18 40.40	163 14.49 30.13 38.26	0 0.00 0.00 .	541 48.09
GED	2 0.18 5.00 11.11	9 0.80 22.50 4.13	8 0.71 20.00 4.82	17 1.51 42.50 5.72	4 0.36 10.00 0.94	0 0.00 0.00 .	40 3.56
NNHSG	0 0.00 0.00 0.00	43 3.82 8.16 19.72	66 5.87 12.52 39.76	160 14.22 30.36 53.87	258 22.93 48.96 60.56	0 0.00 0.00 .	527 46.84
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	18 1.60	218 19.38	166 14.76	297 26.40	426 37.87	0 0.00	1125 100.00

SEVERAL PERTINENT S... ISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 22 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT		I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	FREQUENCY	0	1	0	2	3	0	6
	PERCENT	0.00	0.16	0.00	0.33	0.49	0.00	0.99
	ROW PCT	0.00	16.67	0.00	33.33	50.00	0.00	
	COL PCT	.	6.25	0.00	1.89	0.68	0.00	
HSDG	FREQUENCY	0	12	27	58	299	4	400
	PERCENT	0.00	1.98	4.45	9.56	49.26	0.66	65.90
	ROW PCT	0.00	3.00	6.75	14.50	74.75	1.00	
	COL PCT	.	75.00	64.29	54.72	68.11	100.00	
GED	FREQUENCY	0	0	1	2	6	0	9
	PERCENT	0.00	0.00	0.16	0.33	0.99	0.00	1.48
	ROW PCT	0.00	0.00	11.11	22.22	66.67	0.00	
	COL PCT	.	0.00	2.38	1.89	1.37	0.00	
NNHSG	FREQUENCY	0	3	14	44	131	0	192
	PERCENT	0.00	0.49	2.31	7.25	21.58	0.00	31.63
	ROW PCT	0.00	1.56	7.29	22.92	68.23	0.00	
	COL PCT	.	18.75	33.33	41.51	29.84	0.00	
UNKNOWN	FREQUENCY	0	0	0	0	0	0	0
	PERCENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ROW PCT	.	.	.	.	.	.	
	COL PCT	.	0.00	0.00	0.00	0.00	0.00	
TOTAL		0	16	42	106	439	4	607
		0.00	2.64	6.92	17.46	72.32	0.66	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 23 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	1	1	1	0	0	3
	0.00	0.93	0.93	0.93	0.00	0.00	2.78
	0.00	33.33	33.33	33.33	0.00	0.00	
	.	20.00	14.29	3.57	0.00	.	
HSDG	0	2	4	8	36	0	50
	0.00	1.85	3.70	7.41	33.33	0.00	46.30
	0.00	4.00	8.00	16.00	72.00	0.00	
	.	40.00	57.14	28.57	52.94	.	
GED	0	0	1	4	3	0	8
	0.00	0.00	0.93	3.70	2.78	0.00	7.41
	0.00	0.00	12.50	50.00	37.50	0.00	
	.	0.00	14.29	14.29	4.41	.	
NNHSG	0	2	1	15	29	0	47
	0.00	1.85	0.93	13.89	26.85	0.00	43.52
	0.00	4.26	2.13	31.91	61.70	0.00	
	.	40.00	14.29	53.57	42.65	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	.	
TOTAL	0	5	7	28	68	0	108
	0.00	4.63	6.48	25.93	62.96	0.00	100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 24 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	1 1.56 100.00 10.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.56
HSDG	0 0.00 0.00 .	6 9.38 17.65 60.00	2 3.13 5.88 50.00	4 6.25 11.76 26.67	21 32.81 61.76 61.76	1 1.56 2.94 100.00	34 53.13
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 3.13 50.00 13.33	2 3.13 50.00 5.88	0 0.00 0.00 0.00	4 6.25
NNHSG	0 0.00 0.00 .	3 4.69 12.00 30.00	2 3.13 8.00 50.00	9 14.06 36.00 60.00	11 17.19 44.00 32.35	0 0.00 0.00 0.00	25 39.06
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	10 15.63	4 6.25	15 23.44	34 53.13	1 1.56	64 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 25 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
GED	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	0 0.00	1 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 26 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	16 0.43 21.05 7.08	40 1.07 52.63 3.61	4 0.11 5.26 0.61	3 0.08 3.95 0.41	1 0.03 1.32 0.16	12 0.32 15.79 3.22	76 2.04
HSDG	188 5.04 8.36 83.19	768 20.58 34.13 69.38	373 9.99 16.58 56.43	366 9.81 16.27 50.48	309 8.28 13.73 48.28	246 6.59 10.93 65.95	2250 60.29
GED	19 0.51 1.48 8.41	269 7.21 20.93 24.30	238 6.38 18.52 36.01	326 8.74 25.37 44.97	327 8.76 25.45 51.09	106 2.84 8.25 28.42	1285 34.43
NNHSG	3 0.08 2.48 1.33	30 0.80 24.79 2.71	46 1.23 38.02 6.96	30 0.80 24.79 4.14	3 0.08 2.48 0.47	9 0.24 7.44 2.41	121 3.24
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	226 6.06	1107 29.66	661 17.71	725 19.43	640 17.15	373 9.99	3732 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 27 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	8 0.50 28.57 7.92	7 0.44 25.00 4.27	8 0.50 28.57 2.00	3 0.19 10.71 0.43	2 0.12 7.14 0.83	28 1.74
HSDG	3 0.19 0.26 100.00	71 4.42 6.17 70.30	123 7.66 10.69 75.00	265 16.50 23.02 66.08	512 31.88 44.48 73.56	177 11.02 15.38 73.44	1151 71.67
GED	0 0.00 0.00 0.00	19 1.18 4.80 18.81	27 1.68 6.82 16.46	124 7.72 31.31 30.92	178 11.08 44.95 25.57	48 2.99 12.12 19.92	396 24.66
NNHSG	0 0.00 0.00 0.00	3 0.19 10.00 2.97	7 0.44 23.33 4.27	4 0.25 13.33 1.00	3 0.19 10.00 0.43	13 0.81 43.33 5.39	30 1.87
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.06 100.00 0.41	1 0.06
TOTAL	3 0.19	101 6.29	164 10.21	401 24.97	696 43.34	241 15.01	1606 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 28 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.63 33.33 100.00	0 0.00 0.00 0.00	1 0.32 16.67 2.78	2 0.63 33.33 2.86	1 0.32 16.67 0.64	0 0.00 0.00 0.00	6 1.90
HSDG	0 0.00 0.00 0.00	21 6.65 10.94 75.00	23 7.28 11.98 63.89	39 12.34 20.31 55.71	95 30.06 49.48 60.90	14 4.43 7.29 58.33	192 60.76
GED	0 0.00 0.00 0.00	6 1.90 5.31 21.43	10 3.16 8.85 27.78	29 9.18 25.66 41.43	59 18.67 52.21 37.82	9 2.85 7.96 37.50	113 35.76
NNHSG	0 0.00 0.00 0.00	1 0.32 20.00 3.57	2 0.63 40.00 5.56	0 0.00 0.00 0.00	1 0.32 20.00 0.64	1 0.32 20.00 4.17	5 1.58
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	2 0.63	28 8.86	36 11.39	70 22.15	156 49.37	24 7.59	316 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 29 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=OTHER

EDLVL	TSC44						
FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.70 16.67 33.33	2 1.40 33.33 8.00	1 0.70 16.67 5.26	2 1.40 33.33 6.67	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 4.20
HSDG	1 0.70 1.09 33.33	18 12.59 19.57 72.00	11 7.69 11.96 57.89	18 12.59 19.57 60.00	32 22.38 34.78 62.75	12 8.39 13.04 80.00	92 64.34
GED	1 0.70 2.33 33.33	5 3.50 11.63 20.00	6 4.20 13.95 31.58	9 6.29 20.93 30.00	19 13.29 44.19 37.25	3 2.10 6.98 20.00	43 30.07
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.70 50.00 5.26	1 0.70 50.00 3.33	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.40
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	3 2.10	25 17.48	19 13.29	30 20.98	51 35.66	15 10.49	143 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC 17:18 MONDAY, JANU... 9, 1989 80
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 30 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 28.57 100.00 66.67	0 0.00 0.00 .	2 28.57
GED	0 0.00 0.00 .	0 0.00 0.00 .	1 14.29 100.00 33.33	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 14.29
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 0.00 .	0 0.00 0.00 .	2 28.57 50.00 66.67	1 14.29 25.00 100.00	1 14.29 25.00 33.33	0 0.00 0.00 .	4 57.14
TOTAL	0 0.00	0 0.00	3 42.86	1 14.29	3 42.86	0 0.00	7 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 31 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	19	25	7	3	1	2	57
	0.74	0.98	0.27	0.12	0.04	0.08	2.23
	33.33	43.86	12.28	5.26	1.75	3.51	
	9.31	2.59	1.62	0.70	0.36	0.83	
HSDG	169	765	273	244	164	185	1800
	6.62	29.95	10.69	9.55	6.42	7.24	70.48
	9.39	42.50	15.17	13.56	9.11	10.28	
	82.84	79.19	63.19	56.61	58.57	76.76	
GED	15	160	136	177	111	45	644
	0.59	6.26	5.32	6.93	4.35	1.76	25.22
	2.33	24.84	21.12	27.48	17.24	6.99	
	7.35	16.56	31.48	41.07	39.64	18.67	
NNHSG	1	16	15	7	4	9	52
	0.04	0.63	0.59	0.27	0.16	0.35	2.04
	1.92	30.77	28.85	13.46	7.69	17.31	
	0.49	1.66	3.47	1.62	1.43	3.73	
UNKNOWN	0	0	1	0	0	0	1
	0.00	0.00	0.04	0.00	0.00	0.00	0.04
	0.00	0.00	100.00	0.00	0.00	0.00	
	0.00	0.00	0.23	0.00	0.00	0.00	
TOTAL	204	966	432	431	280	241	2554
	7.99	37.82	16.91	16.88	10.96	9.44	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 32 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=BLACK

EDLVL / TSC44 FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	7 0.58 24.14 7.87	10 0.83 34.48 7.04	5 0.42 17.24 1.77	4 0.33 13.79 0.78	3 0.25 10.34 1.72	29 2.41
HSDG	4 0.33 0.42 80.00	67 5.56 6.96 75.28	109 9.05 11.33 76.76	214 17.77 22.25 75.62	413 34.30 42.93 80.82	155 12.87 16.11 89.08	962 79.90
GED	1 0.08 0.50 20.00	12 1.00 6.00 13.48	19 1.58 9.50 13.38	60 4.98 30.00 21.20	94 7.81 47.00 18.40	14 1.16 7.00 8.05	200 16.61
NNHSG	0 0.00 0.00 0.00	3 0.25 23.08 3.37	4 0.33 30.77 2.82	4 0.33 30.77 1.41	0 0.00 0.00 0.00	2 0.17 15.38 1.15	13 1.08
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	5 0.42	89 7.39	142 11.79	283 23.50	511 42.44	174 14.45	1204 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 33 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	2 0.66 20.00 6.45	2 0.66 20.00 5.88	5 1.64 50.00 6.49	1 0.33 10.00 0.71	0 0.00 0.00 0.00	10 3.28
HSDG	1 0.33 0.46 100.00	23 7.54 10.65 74.19	25 8.20 11.57 73.53	53 17.38 24.54 68.83	96 31.48 44.44 68.09	18 5.90 8.33 85.71	216 70.82
GED	0 0.00 0.00 0.00	5 1.64 6.58 16.13	6 1.97 7.89 17.65	19 6.23 25.00 24.68	43 14.10 56.58 30.50	3 0.98 3.95 14.29	76 24.92
NNHSG	0 0.00 0.00 0.00	1 0.33 33.33 3.23	1 0.33 33.33 2.94	0 0.00 0.00 0.00	1 0.33 33.33 0.71	0 0.00 0.00 0.00	3 0.98
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	1 0.33	31 10.16	34 11.15	77 25.25	141 46.23	21 6.89	305 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 34 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	1 0.85 25.00 5.26	0 0.00 0.00 0.00	1 0.85 25.00 3.85	1 0.85 25.00 2.27	1 0.85 25.00 10.00	4 3.42
HSDG	1 0.85 1.20 100.00	16 13.68 19.28 84.21	15 12.82 18.07 88.24	19 16.24 22.89 73.08	25 21.37 30.12 56.82	7 5.98 8.43 70.00	83 70.94
GED	0 0.00 0.00 0.00	2 1.71 7.41 10.53	2 1.71 7.41 11.76	4 3.42 14.81 15.38	17 14.53 62.96 38.64	2 1.71 7.41 20.00	27 23.08
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.71 66.67 7.69	1 0.85 33.33 2.27	0 0.00 0.00 0.00	3 2.56
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	1 0.85	19 16.24	17 14.53	26 22.22	44 37.61	10 8.55	117 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 35 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 36 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	4	28	0	2	0	0	34
	0.15	1.08	0.00	0.08	0.00	0.00	1.32
	11.76	82.35	0.00	5.88	0.00	0.00	
	4.12	4.01	0.00	0.33	0.00	0.00	
HSDG	75	439	237	220	199	99	1269
	2.90	17.00	9.18	8.52	7.70	3.83	49.13
	5.91	34.59	18.68	17.34	15.68	7.80	
	77.32	62.80	50.97	36.36	36.78	56.25	
GED	14	213	211	361	338	71	1208
	0.54	8.25	8.17	13.98	13.09	2.75	46.77
	1.16	17.63	17.47	29.88	27.98	5.88	
	14.43	30.47	45.38	59.67	62.48	40.34	
NNHSG	4	19	17	22	4	6	72
	0.15	0.74	0.66	0.85	0.15	0.23	2.79
	5.56	26.39	23.61	30.56	5.56	8.33	
	4.12	2.72	3.66	3.64	0.74	3.41	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	97	699	465	605	541	176	2583
	3.76	27.06	18.00	23.42	20.94	6.81	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 37 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.12 11.11 33.33	4 0.49 44.44 8.33	1 0.12 11.11 1.25	0 0.00 0.00 0.00	1 0.12 11.11 0.25	2 0.25 22.22 3.03	9 1.11
HSDG	1 0.12 0.19 33.33	34 4.19 6.49 70.83	50 6.16 9.54 62.50	131 16.13 25.00 60.93	252 31.03 48.09 63.00	56 6.90 10.69 84.85	524 64.53
GED	1 0.12 0.37 33.33	10 1.23 3.75 20.83	23 2.83 8.61 28.75	78 9.61 29.21 36.28	147 18.10 55.06 36.75	8 0.99 3.00 12.12	267 32.88
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 0.74 50.00 7.50	6 0.74 50.00 2.79	0 0.00 0.00 0.00	0 0.00 0.00 0.00	12 1.48
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	3 0.37	48 5.91	80 9.85	215 26.48	400 49.26	66 8.13	812 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 38 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	0	0	1	2	0	3
	0.00	0.00	0.00	0.69	1.39	0.00	2.08
	0.00	0.00	0.00	33.33	66.67	0.00	
	0.00	0.00	0.00	2.08	3.17	0.00	
HSDG	1	8	7	28	30	5	79
	0.69	5.56	4.86	19.44	20.83	3.47	54.86
	1.27	10.13	8.86	35.44	37.97	6.33	
	100.00	72.73	46.67	58.33	47.62	83.33	
GED	0	3	7	18	31	1	60
	0.00	2.08	4.86	12.50	21.53	0.69	41.67
	0.00	5.00	11.67	30.00	51.67	1.67	
	0.00	27.27	46.67	37.50	49.21	16.67	
NNHSG	0	0	1	1	0	0	2
	0.00	0.00	0.69	0.69	0.00	0.00	1.39
	0.00	0.00	50.00	50.00	0.00	0.00	
	0.00	0.00	6.67	2.08	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	1	11	15	48	63	6	144
	0.69	7.64	10.42	33.33	43.75	4.17	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 39 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	1 1.15 50.00 9.09	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.15 50.00 3.70	0 0.00 0.00 0.00	2 2.30
HSDG	1 1.15 1.89 100.00	7 8.05 13.21 63.64	6 6.90 11.32 50.00	15 17.24 28.30 55.56	17 19.54 32.08 62.96	7 8.05 13.21 77.78	53 60.92
GED	0 0.00 0.00 0.00	3 3.45 10.34 27.27	5 5.75 17.24 41.67	11 12.64 37.93 40.74	9 10.34 31.03 33.33	1 1.15 3.45 11.11	29 33.33
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.15 33.33 8.33	1 1.15 33.33 3.70	0 0.00 0.00 0.00	1 1.15 33.33 11.11	3 3.45
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	1 1.15	11 12.64	12 13.79	27 31.03	27 31.03	9 10.34	87 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 40 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=UNKNOWN

EDLVL / TSC44 (FREQUENCY / PERCENT / ROW PCT / COL PCT)	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 16.67 33.33 100.00	0 0.00 0.00 0.00	1 16.67 33.33 50.00	1 16.67 33.33 50.00	0 0.00 0.00 .	3 50.00
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 16.67 100.00 50.00	0 0.00 0.00 .	1 16.67
UNKNOWN	0 0.00 0.00 .	0 0.00 0.00 0.00	1 16.67 50.00 100.00	1 16.67 50.00 50.00	0 0.00 0.00 0.00	0 0.00 0.00 .	2 33.33
TOTAL	0 0.00	1 16.67	1 16.67	2 33.33	2 33.33	0 0.00	6 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 41 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=WHITE

EDLVL   TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	17 2.04 27.42 17.53	37 4.45 59.68 11.04	3 0.36 4.84 2.86	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 0.60 8.06 3.09	62 7.45
HSDG	75 9.01 12.95 77.32	244 29.33 42.14 72.84	65 7.81 11.23 61.90	46 5.53 7.94 57.50	29 3.49 5.01 54.72	120 14.42 20.73 74.07	579 69.59
GED	3 0.36 1.75 3.09	48 5.77 28.07 14.33	30 3.61 17.54 28.57	34 4.09 19.88 42.50	24 2.88 14.04 45.28	32 3.85 18.71 19.75	171 20.55
NNHSG	2 0.24 10.53 2.06	6 0.72 31.58 1.79	7 0.84 36.84 6.67	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.48 21.05 2.47	19 2.28
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.12 100.00 0.62	1 0.12
TOTAL	97 11.66	335 40.26	105 12.62	80 9.62	53 6.37	162 19.47	832 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 42 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=BLACK

EDLVL / FREQUENCY, PERCENT, ROW PCT, COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	2	2	1	1	1	7
	0.00	0.74	0.74	0.37	0.37	0.37	2.58
	0.00	28.57	28.57	14.29	14.29	14.29	
	0.00	8.70	10.53	1.72	1.09	1.28	
HSDG	1	19	15	49	73	69	226
	0.37	7.01	5.54	18.08	26.94	25.46	83.39
	0.44	8.41	6.64	21.68	32.30	30.53	
	100.00	82.61	78.95	84.48	79.35	88.46	
GED	0	2	1	8	18	6	35
	0.00	0.74	0.37	2.95	6.64	2.21	12.92
	0.00	5.71	2.86	22.86	51.43	17.14	
	0.00	8.70	5.26	13.79	19.57	7.69	
NNHSG	0	0	1	0	0	2	3
	0.00	0.00	0.37	0.00	0.00	0.74	1.11
	0.00	0.00	33.33	0.00	0.00	66.67	
	0.00	0.00	5.26	0.00	0.00	2.56	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	1	23	19	58	92	78	271
	0.37	8.49	7.01	21.40	33.95	28.78	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 43 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	1 2.08 33.33 14.29	0 0.00 0.00 0.00	2 4.17 66.67 22.22	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 6.25
HSDG	2 4.17 6.45 100.00	5 10.42 16.13 71.43	3 6.25 9.68 60.00	4 8.33 12.90 44.44	8 16.67 25.81 80.00	9 18.75 29.03 60.00	31 64.58
GED	0 0.00 0.00 0.00	1 2.08 8.33 14.29	1 2.08 8.33 20.00	2 4.17 16.67 22.22	2 4.17 16.67 20.00	6 12.50 50.00 40.00	12 25.00
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 2.08 50.00 20.00	1 2.08 50.00 11.11	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 4.17
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	2 4.17	7 14.58	5 10.42	9 18.75	10 20.83	15 31.25	48 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 44 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	0.00	
HSDG	0	6	1	7	4	6	24
	0.00	18.75	3.13	21.88	12.50	18.75	75.00
	0.00	25.00	4.17	29.17	16.67	25.00	
	.	85.71	100.00	53.85	100.00	85.71	
GED	0	1	0	6	0	1	8
	0.00	3.13	0.00	18.75	0.00	3.13	25.00
	0.00	12.50	0.00	75.00	0.00	12.50	
	.	14.29	0.00	46.15	0.00	14.29	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	0.00	
TOTAL	0	7	1	13	4	7	32
	0.00	21.88	3.13	40.63	12.50	21.88	100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 45 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 50.00 50.00 100.00	1 50.00 50.00 100.00	0 0.00 0.00 .	2 100.00
GED	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	0 0.00	0 0.00	1 50.00	1 50.00	0 0.00	2 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 46 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
HSDG	2 2.22 3.85 100.00	20 22.22 38.46 76.92	9 10.00 17.31 47.37	5 5.56 9.62 33.33	6 6.67 11.54 46.15	10 11.11 19.23 66.67	52 57.78
GED	0 0.00 0.00 0.00	6 6.67 16.22 23.08	9 10.00 24.32 47.37	10 11.11 27.03 66.67	7 7.78 18.92 53.85	5 5.56 13.51 33.33	37 41.11
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.11 100.00 5.26	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.11
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	2 2.22	26 28.89	19 21.11	15 16.67	13 14.44	15 16.67	90 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 47 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=BLACK

EDLVL FREQUENCY PERCENT ROW PCT COL PCT	TSC44 I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	1 3.85 50.00 33.33	0 0.00 0.00 0.00	1 3.85 50.00 12.50	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 7.69
HSDG	0 0.00 0.00 .	2 7.69 10.53 66.67	1 3.85 5.26 50.00	6 23.08 31.58 75.00	8 30.77 42.11 80.00	2 7.69 10.53 66.67	19 73.08
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	1 3.85 20.00 50.00	1 3.85 20.00 12.50	2 7.69 40.00 20.00	1 3.85 20.00 33.33	5 19.23
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	3 11.54	2 7.69	8 30.77	10 38.46	3 11.54	26 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

TABLE 48 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 0.00	0 0.00 0.00 .	1 11.11 25.00 100.00	0 0.00 0.00 0.00	3 33.33 75.00 50.00	0 0.00 0.00 .	4 44.44
GED	1 11.11 20.00 100.00	0 0.00 0.00 .	0 0.00 0.00 0.00	1 11.11 20.00 100.00	3 33.33 60.00 50.00	0 0.00 0.00 .	5 55.56
NNHSG	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	1 11.11	0 0.00	1 11.11	1 11.11	6 66.67	0 0.00	9 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 49 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 .	1 33.33 50.00 100.00	0 0.00 0.00 .	1 33.33 50.00 50.00	0 0.00 0.00 .	2 66.67
GED	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	1 33.33 100.00 50.00	0 0.00 0.00 .	1 33.33
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	0 0.00	1 33.33	0 0.00	2 66.67	0 0.00	3 100.00

THIS IS FOR FISCAL YEAR 1980

TABLE 50 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
AFQT44	172140	38.21	22.51	0	99.00	99.00	58.91
GT80	172140	85.20	28.26	0	128.00	128.00	33.17

THIS IS FOR FISCAL YEAR 1980

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
SPSTT=ETS							
AFQT44	75234	38.43	22.91	0	99.00	99.00	59.61
GT80	75234	85.50	27.85	0	128.00	128.00	32.57
SPSTT=REUP							
AFQT44	23687	39.31	23.99	0	99.00	99.00	61.03
GT80	23687	86.23	28.93	0	128.00	128.00	33.55
SPSTT=ATTRIT							
AFQT44	65354	36.48	20.53	0	99.00	99.00	56.29
GT80	65354	83.91	27.77	0	128.00	128.00	33.09
SPSTT=STILL IN							
AFQT44	5832	50.71	27.66	0	99.00	99.00	54.54
GT80	5832	91.26	34.94	0	128.00	128.00	38.28
SPSTT=BAD DATA							
AFQT44	2033	36.84	21.67	0	99.00	99.00	58.82
GT80	2033	85.97	26.36	0	128.00	128.00	30.66

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1980

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
PS=NPS							
AFQT44	157211	37.60	21.85	0	99.00	99.00	58.12
GT80	157211	85.51	26.68	0	128.00	128.00	31.19
PS=PS							
AFQT44	14929	44.60	27.72	0	99.00	99.00	62.17
GT80	14929	81.85	41.25	0	128.00	128.00	50.40

THIS IS FOR FISCAL YEAR 1980

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
PS=NPS SPSTT=ETS							
AFQT44	69430	38.03	22.45	0	99.00	99.00	59.03
GT80	69430	85.87	26.43	0	128.00	128.00	30.78
PS=NPS SPSTT=REUP							
AFQT44	19507	37.77	22.67	0	99.00	99.00	60.02
GT80	19507	87.00	25.26	0	128.00	128.00	29.03
PS=NPS SPSTT=ATTRIT							
AFQT44	61722	36.05	20.15	0	99.00	99.00	55.88
GT80	61722	83.91	27.07	0	128.00	128.00	32.26
PS=NPS SPSTT=STILL IN							
AFQT44	4647	51.55	25.83	0	99.00	99.00	50.11
GT80	4647	94.84	28.95	0	128.00	128.00	30.53
PS=NPS SPSTT=BAD DATA							
AFQT44	1905	36.48	21.19	6.00	99.00	93.00	58.08
GT80	1905	86.40	24.89	0.00	128.00	128.00	28.81
PS=PS SPSTT=ETS							
AFQT44	5804	43.23	27.37	0	99.00	99.00	63.32
GT80	5804	80.99	40.91	0	128.00	128.00	50.51
PS=PS SPSTT=REUP							
AFQT44	4180	46.50	28.30	0	99.00	99.00	60.86
GT80	4180	82.63	41.84	0	128.00	128.00	50.64
PS=PS SPSTT=ATTRIT							
AFQT44	3632	43.76	25.18	0	99.00	99.00	57.54
GT80	3632	83.93	37.73	0	128.00	128.00	44.96
PS=PS SPSTT=STILL IN							
AFQT44	1185	47.43	33.69	0	99.00	99.00	71.04
GT80	1185	77.23	49.74	0	128.00	128.00	64.41
PS=PS SPSTT=BAD DATA							
AFQT44	128	42.22	27.41	0	99.00	99.00	64.92
GT80	128	79.64	42.30	0	127.00	127.00	53.12

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

PS	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
NPS	116904	85.1	116904	85.1
PS	20390	14.9	137294	100.0

SPSTT	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
ETS	53406	38.9	53406	38.9
REUP	31123	22.7	84529	61.6
ATTRIT	44758	32.6	129287	94.2
STILL IN	6560	4.8	135847	98.9
BAD DATA	1447	1.1	137294	100.0

TSC44	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
I	3376	2.5	3376	2.5
II	30001	21.9	33377	24.3
IIIA	21908	16.0	55285	40.3
IIIB	38491	28.0	93776	68.3
IV	40069	29.2	133845	97.5
UNKNOWN	3449	2.5	137294	100.0

MC44	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
I-IIIA	55285	40.3	55285	40.3
IIIB	38491	28.0	93776	68.3
IV	40069	29.2	133845	97.5
UNKNOWN	3449	2.5	137294	100.0

EDLVL	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
COL GRAD	2529	1.8	2529	1.8
HSDG	106113	77.3	108642	79.1
GED	8701	6.3	117343	85.5
NNHSG	19939	14.5	137282	100.0
UNKNOWN	12	0.0	137294	100.0

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

HSGRAD	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
HS GRAD	108642	79.1	108642	79.1
NON HSG	28640	20.9	137282	100.0
UNKNOWN	12	0.0	137294	100.0

RETHGP	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
WHITE	89046	64.9	89046	64.9
BLACK	37562	27.4	126608	92.2
HISAPNIC	6377	4.6	132985	96.9
OTHER	4278	3.1	137263	100.0
UNKNOWN	31	0.0	137294	100.0

SEX	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
UNKNOWN	10	0.0	10	0.0
MALE	116842	85.1	116852	85.1
FEMALE	20442	14.9	137294	100.0

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	453 0.51 27.79 14.02	986 1.11 60.49 3.70	104 0.12 6.38 0.60	36 0.04 2.21 0.14	10 0.01 0.61 0.07	41 0.05 2.52 2.14	1630 1.83
HSDG	2617 2.94 4.05 80.97	21503 24.15 33.24 80.76	12164 13.66 18.80 70.69	13931 15.64 21.53 55.76	13196 14.82 20.40 87.48	1281 1.44 1.98 66.93	64692 72.65
GED	94 0.11 1.42 2.91	1657 1.86 25.02 6.22	1486 1.67 22.44 8.64	2434 2.73 36.76 9.74	465 0.52 7.02 3.08	486 0.55 7.34 25.39	6622 7.44
NNHSG	68 0.08 0.42 2.10	2479 2.78 15.40 9.31	3453 3.88 21.45 20.07	8582 9.64 53.31 34.35	1411 1.58 8.76 9.35	106 0.12 0.66 5.54	16099 18.08
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00 33.33 0.00	2 0.00 66.67 0.01	0 0.00 0.00 0.00	3 0.00
TOTAL	3232 3.63	26625 29.90	17207 19.32	24984 28.06	15084 16.94	1914 2.15	89046 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	11 0.03 1.85 17.46	212 0.56 35.57 9.26	129 0.34 21.64 3.74	156 0.42 26.17 1.49	80 0.21 13.42 0.40	8 0.02 1.34 0.61	596 1.59
HSDG	50 0.13 0.15 79.37	1804 4.80 5.50 78.78	2753 7.33 8.40 79.82	8036 21.39 24.51 76.77	19077 50.79 58.17 95.43	1073 2.86 3.27 82.48	32793 87.30
GED	0 0.00 0.00 0.00	139 0.37 9.42 6.07	230 0.61 15.58 6.67	727 1.94 49.25 6.94	241 0.64 16.33 1.21	139 0.37 9.42 10.68	1476 3.93
NNHSG	2 0.01 0.07 3.17	135 0.36 5.01 5.90	337 0.90 12.50 9.77	1549 4.12 57.46 14.80	593 1.58 22.00 2.97	80 0.21 2.97 6.15	2696 7.18
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00 100.00 0.08	1 0.00
TOTAL	63 0.17	2290 6.10	3449 9.18	10468 27.87	19991 53.22	1301 3.46	37562 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	6	43	23	53	61	2	188
	0.09	0.67	0.36	0.83	0.96	0.03	2.95
	3.19	22.87	12.23	28.19	32.45	1.06	
	23.08	8.38	3.22	2.89	1.94	1.36	
HSDG	20	404	525	1232	2882	106	5169
	0.31	6.34	8.23	19.32	45.19	1.66	81.06
	0.39	7.82	10.16	23.83	55.76	2.05	
	76.92	78.75	73.43	67.25	91.67	72.11	
GED	0	30	69	195	71	30	395
	0.00	0.47	1.08	3.06	1.11	0.47	6.19
	0.00	7.59	17.47	49.37	17.97	7.59	
	0.00	5.85	9.65	10.64	2.26	20.41	
NNHSG	0	36	98	352	130	9	625
	0.00	0.56	1.54	5.52	2.04	0.14	9.80
	0.00	5.76	15.68	56.32	20.80	1.44	
	0.00	7.02	13.71	19.21	4.13	6.12	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	26	513	715	1832	3144	147	6377
	0.41	8.04	11.21	28.73	49.30	2.31	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	9 0.21 7.83 16.36	33 0.77 28.70 5.83	24 0.56 20.87 4.49	25 0.58 21.74 2.09	21 0.49 18.26 1.14	3 0.07 2.61 3.45	115 2.69
HSDG	44 1.03 1.28 80.00	453 10.59 13.16 80.04	391 9.14 11.36 73.08	797 18.63 23.16 66.69	1686 39.41 49.00 91.63	70 1.64 2.03 80.46	3441 80.43
GED	1 0.02 0.49 1.82	36 0.84 17.48 6.36	39 0.91 18.93 7.29	89 2.08 43.20 7.45	33 0.77 16.02 1.79	8 0.19 3.88 9.20	206 4.82
NNHSG	1 0.02 0.19 1.82	44 1.03 8.54 7.77	81 1.89 15.73 15.14	283 6.62 54.95 23.68	100 2.34 19.42 5.43	6 0.14 1.17 6.90	515 12.04
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.02 100.00 0.08	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.02
TOTAL	55 1.29	566 13.23	535 12.51	1195 27.93	1840 43.01	87 2.03	4278 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	2 6.45 11.11 28.57	1 3.23 5.56 50.00	7 22.58 38.89 58.33	8 25.81 44.44 80.00	0 0.00 0.00 .	18 58.06
GED	0 0.00 0.00 .	2 6.45 100.00 28.57	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	2 6.45
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 9.68 75.00 25.00	1 3.23 25.00 10.00	0 0.00 0.00 .	4 12.90
UNKNOWN	0 0.00 0.00 .	3 9.68 42.86 42.86	1 3.23 14.29 50.00	2 6.45 28.57 16.67	1 3.23 14.29 10.00	0 0.00 0.00 .	7 22.58
TOTAL	0 0.00	7 22.58	2 6.45	12 38.71	10 32.26	0 0.00	31 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE OF SPSTT BY TSC44

SPSTT TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	1371 1.00 2.57 40.61	12469 9.08 23.35 41.56	8393 6.11 15.72 38.31	13531 9.86 25.34 35.15	16373 11.93 30.66 40.86	1269 0.92 2.38 36.79	53406 38.90
REUP	777 0.57 2.50 23.02	6494 4.73 20.87 21.65	4633 3.37 14.89 21.15	8007 5.83 25.73 20.80	10105 7.36 32.47 25.22	1107 0.81 3.56 32.10	31123 22.67
ATTRIT	740 0.54 1.65 21.92	8688 6.33 19.41 28.96	7672 5.59 17.14 35.02	15111 11.01 33.76 39.26	11978 8.72 26.76 29.89	569 0.41 1.27 16.50	44758 32.60
STILL IN	447 0.33 6.81 13.24	2039 1.49 31.08 6.80	987 0.72 15.05 4.51	1426 1.04 21.74 3.70	1195 0.87 18.22 2.98	466 0.34 7.10 13.51	6560 4.78
BAD DATA	41 0.03 2.83 1.21	311 0.23 21.49 1.04	223 0.16 15.41 1.02	416 0.30 28.75 1.08	418 0.30 28.89 1.04	38 0.03 2.63 1.10	1447 1.05
TOTAL	3376 2.46	30001 21.85	21908 15.96	38491 28.04	40069 29.18	3449 2.51	137294 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE OF SPSTT BY MC44

SPSTT MC44

FREQUENCY PERCENT ROW PCT COL PCT	I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	22233 16.19 41.63 40.22	13531 9.86 25.34 35.15	16373 11.93 30.66 40.86	1269 0.92 2.38 36.79	53406 38.90
REUP	11904 8.67 38.25 21.53	8007 5.83 25.73 20.80	10105 7.36 32.47 25.22	1107 0.81 3.56 32.10	31123 22.67
ATTRIT	17100 12.46 38.21 30.93	15111 11.01 33.76 39.26	11978 8.72 26.76 29.89	569 0.41 1.27 16.50	44758 32.60
STILL IN	3473 2.53 52.94 6.28	1426 1.04 21.74 3.70	1195 0.87 18.22 2.98	466 0.34 7.10 13.51	6560 4.78
BAD DATA	575 0.42 39.74 1.04	416 0.30 28.75 1.08	418 0.30 28.89 1.04	38 0.03 2.63 1.10	1447 1.05
TOTAL	55285 40.27	38491 28.04	40069 29.18	3449 2.51	137294 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE OF SPSTT BY EDLVL

SPSTT EDLVL

FREQUENCY / PERCENT / ROW PCT / COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	859	43231	2789	6520	7	53406
	0.63	31.49	2.03	4.75	0.01	38.90
	1.61	80.95	5.22	12.21	0.01	
	33.97	40.74	32.05	32.70	58.33	
REUP	569	26188	1953	2412	1	31123
	0.41	19.07	1.42	1.76	0.00	22.67
	1.83	84.14	6.28	7.75	0.00	
	22.50	24.68	22.45	12.10	8.33	
ATTRIT	513	30499	3473	10272	1	44758
	0.37	22.21	2.53	7.48	0.00	32.60
	1.15	68.14	7.76	22.95	0.00	
	20.28	28.74	39.91	51.52	8.33	
STILL IN	556	5074	396	534	0	6560
	0.40	3.70	0.29	0.39	0.00	4.78
	8.48	77.35	6.04	8.14	0.00	
	21.98	4.78	4.55	2.68	0.00	
BAD DATA	32	1121	90	201	3	1447
	0.02	0.82	0.07	0.15	0.00	1.05
	2.21	77.47	6.22	13.89	0.21	
	1.27	1.06	1.03	1.01	25.00	
TOTAL	2529	106113	8701	19939	12	137294
	1.84	77.29	6.34	14.52	0.01	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE OF SPSTT BY HSGRAD

SPSTT HSGRAD

FREQUENCY PERCENT ROW PCT COL PCT	HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	44090 32.11 82.56 40.58	9309 6.78 17.43 32.50	7 0.01 0.01 58.33	53406 38.90
REUP	26757 19.49 85.97 24.63	4365 3.18 14.02 15.24	1 0.00 0.00 8.33	31123 22.67
ATTRIT	31012 22.59 69.29 28.55	13745 10.01 30.71 47.99	1 0.00 0.00 8.33	44758 32.60
STILL IN	5630 4.10 85.82 5.18	930 0.68 14.18 3.25	0 0.00 0.00 0.00	6560 4.78
BAD DATA	1153 0.84 79.68 1.06	291 0.21 20.11 1.02	3 0.00 0.21 25.00	1447 1.05
TOTAL	108642 79.13	28640 20.86	12 0.01	137294 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE OF SPSTT BY RETHGP

SPSTT RETHGP

FREQUENCY PERCENT ROW PCT COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	35318 25.72 66.13 39.66	13581 9.89 25.43 36.16	2741 2.00 5.13 42.98	1754 1.28 3.28 41.00	12 0.01 0.02 38.71	53406 38.90
REUP	16209 11.81 52.08 18.20	12073 8.79 38.79 32.14	1708 1.24 5.49 26.78	1126 0.82 3.62 26.32	7 0.01 0.02 22.58	31123 22.67
ATTRIT	31914 23.25 71.30 35.84	10087 7.35 22.54 26.85	1579 1.15 3.53 24.76	1170 0.85 2.61 27.35	8 0.01 0.02 25.81	44758 32.60
STILL IN	4635 3.38 70.66 5.21	1461 1.06 22.27 3.89	294 0.21 4.48 4.61	169 0.12 2.58 3.95	1 0.00 0.02 3.23	6560 4.78
BAD DATA	970 0.71 67.04 1.09	360 0.26 24.88 0.96	55 0.04 3.80 0.86	59 0.04 4.08 1.38	3 0.00 0.21 9.68	1447 1.05
TOTAL	89046 64.86	37562 27.36	6377 4.64	4278 3.12	31 0.02	137294 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE OF SPSTT BY SEX

SPSTT / FREQUENCY / PERCENT / ROW PCT / COL PCT	SEX: UNKNOWN	MALE	FEMALE	TOTAL
ETS	5 0.00 0.01 50.00	47298 34.45 88.56 40.48	6103 4.45 11.43 29.86	53406 38.90
REUP	1 0.00 0.00 10.00	26551 19.34 85.31 22.72	4571 3.33 14.69 22.36	31123 22.67
ATTRIT	1 0.00 0.00 10.00	35953 26.19 80.33 30.77	8804 6.41 19.67 43.07	44758 32.60
STILL IN	0 0.00 0.00 0.00	5859 4.27 89.31 5.01	701 0.51 10.69 3.43	6560 4.78
BAD DATA	3 0.00 0.21 30.00	1181 0.86 81.62 1.01	263 0.19 18.18 1.29	1447 1.05
TOTAL	10 0.01	116842 85.10	20442 14.89	137294 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=WHITE

EDLVL   TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	154	326	42	16	5	11	554
	0.44	0.92	0.12	0.05	0.01	0.03	1.57
	27.80	58.84	7.58	2.89	0.90	1.99	
	11.70	2.89	0.62	0.18	0.08	1.65	
HSDG	1109	9602	5186	5595	5526	430	27448
	3.14	27.19	14.68	15.84	15.65	1.22	77.72
	4.04	34.98	18.89	20.38	20.13	1.57	
	84.27	85.25	76.66	61.68	88.64	64.37	
GED	31	509	443	774	167	183	2107
	0.09	1.44	1.25	2.19	0.47	0.52	5.97
	1.47	24.16	21.03	36.73	7.93	8.69	
	2.36	4.52	6.55	8.53	2.68	27.40	
NNHSG	22	827	1094	2686	534	44	5207
	0.06	2.34	3.10	7.61	1.51	0.12	14.74
	0.42	15.88	21.01	51.58	10.26	0.85	
	1.67	7.34	16.17	29.61	8.57	6.59	
UNKNOWN	0	0	0	0	2	0	2
	0.00	0.00	0.00	0.00	0.01	0.00	0.01
	0.00	0.00	0.00	0.00	100.00	0.00	
	0.00	0.00	0.00	0.00	0.03	0.00	
TOTAL	1316	11264	6765	9071	6234	668	35318
	3.73	31.89	19.15	25.68	17.65	1.89	100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=BLACK

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	4 0.03 1.97 19.05	75 0.55 36.95 9.96	33 0.24 16.26 3.04	57 0.42 28.08 1.76	33 0.24 16.26 0.41	1 0.01 0.49 0.19	203 1.49
HSDG	17 0.13 0.14 80.95	591 4.35 4.91 78.49	889 6.55 7.38 82.01	2509 18.47 20.84 77.32	7620 56.11 63.29 95.67	413 3.04 3.43 80.51	12039 88.65
GED	0 0.00 0.00 0.00	43 0.32 9.21 5.71	65 0.48 13.92 6.00	214 1.58 45.82 6.59	86 0.63 18.42 1.08	59 0.43 12.63 11.50	467 3.44
NNHSG	0 0.00 0.00 0.00	44 0.32 5.05 5.84	97 0.71 11.14 8.95	465 3.42 53.39 14.33	226 1.66 25.95 2.84	39 0.29 4.48 7.60	871 6.41
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.01 100.00 0.19	1 0.01
TOTAL	21 0.15	753 5.54	1084 7.98	3245 23.89	7965 58.65	513 3.78	13581 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.07 3.23 20.00	17 0.62 27.42 8.02	4 0.15 6.45 1.31	21 0.77 33.87 2.80	18 0.66 29.03 1.28	0 0.00 0.00 0.00	62 2.26
HSDG	8 0.29 0.35 80.00	179 6.53 7.86 84.43	230 8.39 10.11 75.16	521 19.01 22.89 69.47	1297 47.32 56.99 92.05	41 1.50 1.80 75.93	2276 83.04
GED	0 0.00 0.00 0.00	6 0.22 4.17 2.83	23 0.84 15.97 7.52	73 2.66 50.69 9.73	33 1.20 22.92 2.34	9 0.33 6.25 16.67	144 5.25
NNHSG	0 0.00 0.00 0.00	10 0.36 3.86 4.72	49 1.79 18.92 16.01	135 4.93 52.12 18.00	61 2.23 23.55 4.33	4 0.15 1.54 7.41	259 9.45
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	10 0.36	212 7.73	306 11.16	750 27.36	1409 51.40	54 1.97	2741 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2	14	8	11	5	0	40
	0.11	0.80	0.46	0.63	0.29	0.00	2.28
	5.00	35.00	20.00	27.50	12.50	0.00	
	8.33	5.86	3.38	2.39	0.66	0.00	
HSDG	22	199	188	317	709	27	1462
	1.25	11.35	10.72	18.07	40.42	1.54	83.35
	1.50	13.61	12.86	21.68	48.50	1.85	
	91.67	83.26	79.32	68.91	93.29	79.41	
GED	0	13	11	33	10	4	71
	0.00	0.74	0.63	1.88	0.57	0.23	4.05
	0.00	18.31	15.49	46.48	14.08	5.63	
	0.00	5.44	4.64	7.17	1.32	11.76	
NNHSG	0	13	30	99	36	3	181
	0.00	0.74	1.71	5.64	2.05	0.17	10.32
	0.00	7.18	16.57	54.70	19.89	1.66	
	0.00	5.44	12.66	21.52	4.74	8.82	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	24	239	237	460	760	34	1754
	1.37	13.63	13.51	26.23	43.33	1.94	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=UNKNOWN

EDLVL / TSC44 FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 25.00 50.00 60.00	3 25.00 50.00 60.00	0 0.00 0.00 .	6 50.00
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 8.33 50.00 20.00	1 8.33 50.00 20.00	0 0.00 0.00 .	2 16.67
UNKNOWN	0 0.00 0.00 .	1 8.33 25.00 100.00	1 8.33 25.00 100.00	1 8.33 25.00 20.00	1 8.33 25.00 20.00	0 0.00 0.00 .	4 33.33
TOTAL	0 0.00	1 8.33	1 8.33	5 41.67	5 41.67	0 0.00	12 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 6 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	87	170	20	4	3	16	300
	0.54	1.05	0.12	0.02	0.02	0.10	1.85
	29.00	56.67	6.67	1.33	1.00	5.33	
	11.87	3.08	0.64	0.11	0.12	2.54	
HSDG	605	4619	2416	2509	2185	471	12805
	3.73	28.50	14.91	15.48	13.48	2.91	79.00
	4.72	36.07	18.87	19.59	17.06	3.68	
	82.54	83.77	77.02	66.32	90.55	74.88	
GED	28	406	296	397	107	129	1363
	0.17	2.50	1.83	2.45	0.66	0.80	8.41
	2.05	29.79	21.72	29.13	7.85	9.46	
	3.82	7.36	9.44	10.49	4.43	20.51	
NNHSG	13	319	405	873	118	13	1741
	0.08	1.97	2.50	5.39	0.73	0.08	10.74
	0.75	18.32	23.26	50.14	6.78	0.75	
	1.77	5.79	12.91	23.08	4.89	2.07	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	733	5514	3137	3783	2413	629	16209
	4.52	34.02	19.35	23.34	14.89	3.88	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 7 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3 0.02 1.74 11.11	49 0.41 28.49 6.86	43 0.36 25.00 3.63	44 0.36 25.58 1.28	29 0.24 16.86 0.46	4 0.03 2.33 1.01	172 1.42
HSDG	22 0.18 0.20 81.48	609 5.04 5.54 85.29	1001 8.29 9.10 84.54	2913 24.13 26.49 84.58	6105 50.57 55.53 96.81	345 2.86 3.14 86.68	10995 91.07
GED	0 0.00 0.00 0.00	38 0.31 8.82 5.32	73 0.60 16.94 6.17	207 1.71 48.03 6.01	77 0.64 17.87 1.22	36 0.30 8.35 9.05	431 3.57
NNHSG	2 0.02 0.42 7.41	18 0.15 3.79 2.52	67 0.55 14.11 5.66	280 2.32 58.95 8.13	95 0.79 20.00 1.51	13 0.11 2.74 3.27	475 3.93
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	27 0.22	714 5.91	1184 9.81	3444 28.53	6306 52.23	398 3.30	12073 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 8 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=HISAPNIC

EDLVL / TSC44 FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	15 0.88 23.81 11.19	8 0.47 12.70 4.19	16 0.94 25.40 3.38	23 1.35 36.51 2.72	1 0.06 1.59 1.79	63 3.69
HSDG	7 0.41 0.49 100.00	105 6.15 7.33 78.36	152 8.90 10.61 79.58	339 19.85 23.67 71.52	791 46.31 55.24 93.50	38 2.22 2.65 67.86	1432 83.84
GED	0 0.00 0.00 0.00	9 0.53 8.33 6.72	18 1.05 16.67 9.42	52 3.04 48.15 10.97	14 0.82 12.96 1.65	15 0.88 13.89 26.79	108 6.32
NNHSG	0 0.00 0.00 0.00	5 0.29 4.76 3.73	13 0.76 12.38 6.81	67 3.92 63.81 14.14	18 1.05 17.14 2.13	2 0.12 1.90 3.57	105 6.15
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	7 0.41	134 7.85	191 11.18	474 27.75	846 49.53	56 3.28	1708 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 9 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2	7	7	10	8	0	34
	0.18	0.62	0.62	0.89	0.71	0.00	3.02
	5.88	20.59	20.59	29.41	23.53	0.00	
	20.00	5.34	5.79	3.29	1.49	0.00	
HSDG	8	107	92	221	499	22	949
	0.71	9.50	8.17	19.63	44.32	1.95	84.28
	0.84	11.28	9.69	23.29	52.58	2.32	
	80.00	81.68	76.03	72.70	93.10	91.67	
GED	0	9	7	23	12	0	51
	0.00	0.80	0.62	2.04	1.07	0.00	4.53
	0.00	17.65	13.73	45.10	23.53	0.00	
	0.00	6.87	5.79	7.57	2.24	0.00	
NNHSG	0	8	15	49	17	2	91
	0.00	0.71	1.33	4.35	1.51	0.18	8.08
	0.00	8.79	16.48	53.85	18.68	2.20	
	0.00	6.11	12.40	16.12	3.17	8.33	
UNKNOWN	0	0	0	1	0	0	1
	0.00	0.00	0.00	0.09	0.00	0.00	0.09
	0.00	0.00	0.00	100.00	0.00	0.00	
	0.00	0.00	0.00	0.33	0.00	0.00	
TOTAL	10	131	121	304	536	24	1126
	0.89	11.63	10.75	27.00	47.60	2.13	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 10 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 14.29 14.29 100.00	0 0.00 0.00 .	2 28.57 28.57 100.00	4 57.14 57.14 100.00	0 0.00 0.00 .	7 100.00
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 14.29	0 0.00	2 28.57	4 57.14	0 0.00	7 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 11 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	62	198	29	12	2	8	311
	0.19	0.62	0.09	0.04	0.01	0.03	0.97
	19.94	63.67	9.32	3.86	0.64	2.57	
	8.68	2.56	0.46	0.11	0.03	2.24	
HSDG	594	5688	3818	5089	4903	178	20270
	1.86	17.82	11.96	15.95	15.36	0.56	63.51
	2.93	28.06	18.84	25.11	24.19	0.88	
	83.19	73.42	60.12	46.45	84.70	49.86	
GED	27	634	669	1133	167	134	2764
	0.08	1.99	2.10	3.55	0.52	0.42	8.66
	0.98	22.94	24.20	40.99	6.04	4.85	
	3.78	8.18	10.53	10.34	2.88	37.54	
NNHSG	31	1227	1835	4721	717	37	8568
	0.10	3.84	5.75	14.79	2.25	0.12	26.85
	0.36	14.32	21.42	55.10	8.37	0.43	
	4.34	15.84	28.89	43.09	12.39	10.36	
UNKNOWN	0	0	0	1	0	0	1
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	100.00	0.00	0.00	
	0.00	0.00	0.00	0.01	0.00	0.00	
TOTAL	714	7747	6351	10956	5789	357	31914
	2.24	24.27	19.90	34.33	18.14	1.12	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 12 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	51	30	35	14	1	132
	0.01	0.51	0.30	0.35	0.14	0.01	1.31
	0.76	38.64	22.73	26.52	10.61	0.76	
	12.50	7.72	3.06	1.06	0.28	0.53	
HSDG	7	493	707	2217	4627	143	8194
	0.07	4.89	7.01	21.98	45.87	1.42	81.23
	0.09	6.02	8.63	27.06	56.47	1.75	
	87.50	74.58	72.07	67.45	93.27	75.66	
GED	0	51	84	289	64	28	516
	0.00	0.51	0.83	2.87	0.63	0.28	5.12
	0.00	9.88	16.28	56.01	12.40	5.43	
	0.00	7.72	8.56	8.79	1.29	14.81	
NNHSG	0	66	160	746	256	17	1245
	0.00	0.65	1.59	7.40	2.54	0.17	12.34
	0.00	5.30	12.85	59.92	20.56	1.37	
	0.00	9.98	16.31	22.70	5.16	8.99	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	8	661	981	3287	4961	189	10087
	0.08	6.55	9.73	32.59	49.18	1.87	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 13 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2	11	7	12	15	0	47
	0.13	0.70	0.44	0.76	0.95	0.00	2.98
	4.26	23.40	14.89	25.53	31.91	0.00	
	40.00	8.59	3.91	2.43	1.97	0.00	
HSDG	3	87	121	280	681	9	1181
	0.19	5.51	7.66	17.73	43.13	0.57	74.79
	0.25	7.37	10.25	23.71	57.66	0.76	
	60.00	67.97	67.60	56.80	89.25	81.82	
GED	0	12	21	63	21	2	119
	0.00	0.76	1.33	3.99	1.33	0.13	7.54
	0.00	10.08	17.65	52.94	17.65	1.68	
	0.00	9.38	11.73	12.78	2.75	18.18	
NNHSG	0	18	30	138	46	0	232
	0.00	1.14	1.90	8.74	2.91	0.00	14.69
	0.00	7.76	12.93	59.48	19.83	0.00	
	0.00	14.06	16.76	27.99	6.03	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	5	128	179	493	763	11	1579
	0.32	8.11	11.34	31.22	48.32	0.70	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 14 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.09 4.35 7.69	4 0.34 17.39 2.67	7 0.60 30.43 4.38	4 0.34 17.39 1.08	7 0.60 30.43 1.51	0 0.00 0.00 0.00	23 1.97
HSDG	10 0.85 1.18 76.92	112 9.57 13.18 74.67	97 8.29 11.41 60.63	217 18.55 25.53 58.49	405 34.62 47.65 87.28	9 0.77 1.06 75.00	850 72.65
GED	1 0.09 1.39 7.69	12 1.03 16.67 8.00	21 1.79 29.17 13.13	26 2.22 36.11 7.01	10 0.85 13.89 2.16	2 0.17 2.78 16.67	72 6.15
NNHSG	1 0.09 0.44 7.69	22 1.88 9.78 14.67	35 2.99 15.56 21.88	124 10.60 55.11 33.42	42 3.59 18.67 9.05	1 0.09 0.44 8.33	225 19.23
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	13 1.11	150 12.82	160 13.68	371 31.71	464 39.66	12 1.03	1170 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 15 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 0.00	1 12.50 25.00 100.00	2 25.00 50.00 50.00	1 12.50 25.00 100.00	0 0.00 0.00 .	4 50.00
GED	0 0.00 0.00 .	2 25.00 100.00 100.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	2 25.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 25.00 100.00 50.00	0 0.00 0.00 0.00	0 0.00 0.00 .	2 25.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	2 25.00	1 12.50	4 50.00	1 12.50	0 0.00	8 100.00

SEVERAL PERTINENT S. STICS FOR TRADOC   17:15 MONDAY, JANL   9, 1989   29
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 16 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=WHITE

EDLVL   TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	146 3.15 32.59 34.03	281 6.06 62.72 15.38	12 0.26 2.68 1.55	3 0.06 0.67 0.34	0 0.00 0.00 0.00	6 0.13 1.34 2.51	448 9.67
HSDG	276 5.95 8.02 64.34	1371 29.58 39.82 75.04	609 13.14 17.69 78.58	573 12.36 16.64 64.09	428 9.23 12.43 90.87	186 4.01 5.40 77.82	3443 74.28
GED	5 0.11 1.59 1.17	93 2.01 29.52 5.09	58 1.25 18.41 7.48	102 2.20 32.38 11.41	20 0.43 6.35 4.25	37 0.80 11.75 15.48	315 6.80
NNHSG	2 0.04 0.47 0.47	82 1.77 19.11 4.49	96 2.07 22.38 12.39	216 4.66 50.35 24.16	23 0.50 5.36 4.88	10 0.22 2.33 4.18	429 9.26
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	429 9.26	1827 39.42	775 16.72	894 19.29	471 10.16	239 5.16	4635 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 17 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3 0.21 3.85 42.86	32 2.19 41.03 22.54	20 1.37 25.64 12.05	18 1.23 23.08 4.65	3 0.21 3.85 0.53	2 0.14 2.56 1.06	78 5.34
HSDG	4 0.27 0.32 57.14	103 7.05 8.16 72.54	130 8.90 10.30 78.31	314 21.49 24.88 81.14	549 37.58 43.50 96.15	162 11.09 12.84 86.17	1262 86.38
GED	0 0.00 0.00 0.00	4 0.27 8.33 2.82	8 0.55 16.67 4.82	12 0.82 25.00 3.10	10 0.68 20.83 1.75	14 0.96 29.17 7.45	48 3.29
NNHSG	0 0.00 0.00 0.00	3 0.21 4.11 2.11	8 0.55 10.96 4.82	43 2.94 58.90 11.11	9 0.62 12.33 1.58	10 0.68 13.70 5.32	73 5.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	7 0.48	142 9.72	166 11.36	387 26.49	571 39.08	188 12.87	1461 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 18 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.34 7.14 33.33	0 0.00 0.00 0.00	4 1.36 28.57 11.76	4 1.36 28.57 4.04	4 1.36 28.57 3.96	1 0.34 7.14 3.85	14 4.76
HSDG	2 0.68 0.85 66.67	26 8.84 11.02 83.87	19 6.46 8.05 55.88	80 27.21 33.90 80.81	91 30.95 38.56 90.10	18 6.12 7.63 69.23	236 80.27
GED	0 0.00 0.00 0.00	3 1.02 13.64 9.68	7 2.38 31.82 20.59	5 1.70 22.73 5.05	3 1.02 13.64 2.97	4 1.36 18.18 15.38	22 7.48
NNHSG	0 0.00 0.00 0.00	2 0.68 9.09 6.45	4 1.36 18.18 11.76	10 3.40 45.45 10.10	3 1.02 13.64 2.97	3 1.02 13.64 11.54	22 7.48
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	3 1.02	31 10.54	34 11.56	99 33.67	101 34.35	26 8.84	294 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 19 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=OTHER

EDLVL	FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	FREQUENCY	4	7	2	0	1	2	16
	PERCENT	2.37	4.14	1.18	0.00	0.59	1.18	9.47
	ROW PCT	25.00	43.75	12.50	0.00	6.25	12.50	
	COL PCT	50.00	18.42	16.67	0.00	1.92	15.38	
HSDG	FREQUENCY	4	28	9	33	48	10	132
	PERCENT	2.37	16.57	5.33	19.53	28.40	5.92	78.11
	ROW PCT	3.03	21.21	6.82	25.00	36.36	7.58	
	COL PCT	50.00	73.68	75.00	71.74	92.31	76.92	
GED	FREQUENCY	0	2	0	7	1	1	11
	PERCENT	0.00	1.18	0.00	4.14	0.59	0.59	6.51
	ROW PCT	0.00	18.18	0.00	63.64	9.09	9.09	
	COL PCT	0.00	5.26	0.00	15.22	1.92	7.69	
NNHSG	FREQUENCY	0	1	1	6	2	0	10
	PERCENT	0.00	0.59	0.59	3.55	1.18	0.00	5.92
	ROW PCT	0.00	10.00	10.00	60.00	20.00	0.00	
	COL PCT	0.00	2.63	8.33	13.04	3.85	0.00	
UNKNOWN	FREQUENCY	0	0	0	0	0	0	0
	PERCENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ROW PCT	.	.	.	.	.	.	
	COL PCT	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL		8	38	12	46	52	13	169
		4.73	22.49	7.10	27.22	30.77	7.69	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 20 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 21 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	4	11	1	1	0	0	17
	0.41	1.13	0.10	0.10	0.00	0.00	1.75
	23.53	64.71	5.88	5.88	0.00	0.00	
	10.00	4.03	0.56	0.36	0.00	0.00	
HSDG	33	223	135	165	154	16	726
	3.40	22.99	13.92	17.01	15.88	1.65	74.85
	4.55	30.72	18.60	22.73	21.21	2.20	
	82.50	81.68	75.42	58.93	87.01	76.19	
GED	3	15	20	28	4	3	73
	0.31	1.55	2.06	2.89	0.41	0.31	7.53
	4.11	20.55	27.40	38.36	5.48	4.11	
	7.50	5.49	11.17	10.00	2.26	14.29	
NNHSG	0	24	23	86	19	2	154
	0.00	2.47	2.37	8.87	1.96	0.21	15.88
	0.00	15.58	14.94	55.84	12.34	1.30	
	0.00	8.79	12.85	30.71	10.73	9.52	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	40	273	179	280	177	21	970
	4.12	28.14	18.45	28.87	18.25	2.16	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 22 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	5 1.39 45.45 25.00	3 0.83 27.27 8.82	2 0.56 18.18 1.90	1 0.28 9.09 0.53	0 0.00 0.00 0.00	11 3.06
HSDG	0 0.00 0.00 .	8 2.22 2.64 40.00	26 7.22 8.58 76.47	83 23.06 27.39 79.05	176 48.89 58.09 93.62	10 2.78 3.30 76.92	303 84.17
GED	0 0.00 0.00 .	3 0.83 21.43 15.00	0 0.00 0.00 0.00	5 1.39 35.71 4.76	4 1.11 28.57 2.13	2 0.56 14.29 15.38	14 3.89
NNHSG	0 0.00 0.00 .	4 1.11 12.50 20.00	5 1.39 15.63 14.71	15 4.17 46.88 14.29	7 1.94 21.88 3.72	1 0.28 3.13 7.69	32 8.89
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	20 5.56	34 9.44	105 29.17	188 52.22	13 3.61	360 100.00

SEVERAL PERTINENT S .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 23 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 1.82 50.00 100.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.82 50.00 4.00	0 0.00 0.00 .	2 3.64
HSDG	0 0.00 0.00 0.00	7 12.73 15.91 87.50	3 5.45 6.82 60.00	12 21.82 27.27 75.00	22 40.00 50.00 88.00	0 0.00 0.00 .	44 80.00
GED	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 3.64 100.00 12.50	0 0.00 0.00 0.00	0 0.00 0.00 .	2 3.64
NNHSG	0 0.00 0.00 0.00	1 1.82 14.29 12.50	2 3.64 28.57 40.00	2 3.64 28.57 12.50	2 3.64 28.57 8.00	0 0.00 0.00 .	7 12.73
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	1 1.82	8 14.55	5 9.09	16 29.09	25 45.45	0 0.00	55 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 24 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	1 1.69 50.00 12.50	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.69 50.00 25.00	2 3.39
HSDG	0 0.00 0.00 .	7 11.86 14.58 87.50	5 8.47 10.42 100.00	9 15.25 18.75 64.29	25 42.37 52.08 89.29	2 3.39 4.17 50.00	48 81.36
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.69 100.00 25.00	1 1.69
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 8.47 62.50 35.71	3 5.08 37.50 10.71	0 0.00 0.00 0.00	8 13.56
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	8 13.56	5 8.47	14 23.73	28 47.46	4 6.78	59 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 25 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 0.00 .	2 66.67 66.67 100.00	0 0.00 0.00 .	1 33.33 33.33 100.00	0 0.00 0.00 .	0 0.00 0.00 .	3 100.00
TOTAL	0 0.00	2 66.67	0 0.00	1 33.33	0 0.00	0 0.00	3 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 1 OF SPSTT BY TSC44
CONTROLLING FOR PS=NPS

SPSTT TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	1184	11009	7441	12008	15030	15	46687
	1.01	9.42	6.37	10.27	12.86	0.01	39.94
	2.54	23.58	15.94	25.72	32.19	0.03	
	45.09	43.89	39.41	35.50	41.22	50.00	
REUP	476	4638	3564	6518	8889	5	24090
	0.41	3.97	3.05	5.58	7.60	0.00	20.61
	1.98	19.25	14.79	27.06	36.90	0.02	
	18.13	18.49	18.88	19.27	24.38	16.67	
ATTRIT	596	7568	6859	13738	11136	9	39906
	0.51	6.47	5.87	11.75	9.53	0.01	34.14
	1.49	18.96	17.19	34.43	27.91	0.02	
	22.70	30.17	36.33	40.62	30.54	30.00	
STILL IN	339	1606	826	1191	1014	1	4977
	0.29	1.37	0.71	1.02	0.87	0.00	4.26
	6.81	32.27	16.60	23.93	20.37	0.02	
	12.91	6.40	4.38	3.52	2.78	3.33	
BAD DATA	31	261	190	368	394	0	1244
	0.03	0.22	0.16	0.31	0.34	0.00	1.06
	2.49	20.98	15.27	29.58	31.67	0.00	
	1.18	1.04	1.01	1.09	1.08	0.00	
TOTAL	2626	25082	18880	33823	36463	30	116904
	2.25	21.46	16.15	28.93	31.19	0.03	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 2 OF SPSTT BY TSC44
CONTROLLING FOR PS=PS

SPSTT TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	187 0.92 2.78 24.93	1460 7.16 21.73 29.68	952 4.67 14.17 31.44	1523 7.47 22.67 32.63	1343 6.59 19.99 37.24	1254 6.15 18.66 36.68	6719 32.95
REUP	301 1.48 4.28 40.13	1856 9.10 26.39 37.73	1069 5.24 15.20 35.30	1489 7.30 21.17 31.90	1216 5.96 17.29 33.72	1102 5.40 15.67 32.23	7033 34.49
ATTRIT	144 0.71 2.97 19.20	1120 5.49 23.08 22.77	813 3.99 16.76 26.85	1373 6.73 28.30 29.41	842 4.13 17.35 23.35	560 2.75 11.54 16.38	4852 23.80
STILL IN	108 0.53 6.82 14.40	433 2.12 27.35 8.80	161 0.79 10.17 5.32	235 1.15 14.85 5.03	181 0.89 11.43 5.02	465 2.28 29.37 13.60	1583 7.76
BAD DATA	10 0.05 4.93 1.33	50 0.25 24.63 1.02	33 0.16 16.26 1.09	48 0.24 23.65 1.03	24 0.12 11.82 0.67	38 0.19 18.72 1.11	203 1.00
TOTAL	750 3.68	4919 24.12	3028 14.85	4668 22.89	3606 17.69	3419 16.77	20390 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 1 OF SPSTT BY MC44
CONTROLLING FOR PS=NPS

SPSTT / FREQUENCY / PERCENT / ROW PCT / COL PCT	MC44: I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	19634	12008	15030	15	46687
	16.79	10.27	12.86	0.01	39.94
	42.05	25.72	32.19	0.03	
	42.14	35.50	41.22	50.00	
REUP	8678	6518	8889	5	24090
	7.42	5.58	7.60	0.00	20.61
	36.02	27.06	36.90	0.02	
	18.63	19.27	24.38	16.67	
ATTRIT	15023	13738	11136	9	39906
	12.85	11.75	9.53	0.01	34.14
	37.65	34.43	27.91	0.02	
	32.25	40.62	30.54	30.00	
STILL IN	2771	1191	1014	1	4977
	2.37	1.02	0.87	0.00	4.26
	55.68	23.93	20.37	0.02	
	5.95	3.52	2.78	3.33	
BAD DATA	482	368	394	0	1244
	0.41	0.31	0.34	0.00	1.06
	38.75	29.58	31.67	0.00	
	1.03	1.09	1.08	0.00	
TOTAL	46588	33823	36463	30	116904
	39.85	28.93	31.19	0.03	100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 2 OF SPSTT BY MC44
CONTROLLING FOR PS=PS

SPSTT MC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	2599 12.75 38.68 29.88	1523 7.47 22.67 32.63	1343 6.59 19.99 37.24	1254 6.15 18.66 36.68	6719 32.95
REUP	3226 15.82 45.87 37.09	1489 7.30 21.17 31.90	1216 5.96 17.29 33.72	1102 5.40 15.67 32.23	7033 34.49
ATTRIT	2077 10.19 42.81 23.88	1373 6.73 28.30 29.41	842 4.13 17.35 23.35	560 2.75 11.54 16.38	4852 23.80
STILL IN	702 3.44 44.35 8.07	235 1.15 14.85 5.03	181 0.89 11.43 5.02	465 2.28 29.37 13.60	1583 7.76
BAD DATA	93 0.46 45.81 1.07	48 0.24 23.65 1.03	24 0.12 11.82 0.67	38 0.19 18.72 1.11	203 1.00
TOTAL	8697 42.65	4668 22.89	3606 17.69	3419 16.77	20390 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 1 OF SPSTT BY EDLVL
CONTROLLING FOR PS=NPS

SPSTT / EDLVL (FREQUENCY, PERCENT, ROW PCT, COL PCT)	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	730	38624	1110	6221	2	46687
	0.62	33.04	0.95	5.32	0.00	39.94
	1.56	82.73	2.38	13.32	0.00	
	36.94	41.89	31.98	32.33	50.00	
REUP	360	20961	508	2260	1	24090
	0.31	17.93	0.43	1.93	0.00	20.61
	1.49	87.01	2.11	9.38	0.00	
	18.22	22.73	14.64	11.75	25.00	
ATTRIT	426	27715	1692	10072	1	39906
	0.36	23.71	1.45	8.62	0.00	34.14
	1.07	69.45	4.24	25.24	0.00	
	21.56	30.06	48.75	52.35	25.00	
STILL IN	435	3922	124	496	0	4977
	0.37	3.35	0.11	0.42	0.00	4.26
	8.74	78.80	2.49	9.97	0.00	
	22.01	4.25	3.57	2.58	0.00	
BAD DATA	25	991	37	191	0	1244
	0.02	0.85	0.03	0.16	0.00	1.06
	2.01	79.66	2.97	15.35	0.00	
	1.27	1.07	1.07	0.99	0.00	
TOTAL	1976	92213	3471	19240	4	116904
	1.69	78.88	2.97	16.46	0.00	100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 2 OF SPSTT BY EDLVL
CONTROLLING FOR PS=PS

SPSTT EDLVL

FREQUENCY PERCENT ROW PCT COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	129 0.63 1.92 23.33	4607 22.59 68.57 33.14	1679 8.23 24.99 32.10	299 1.47 4.45 42.78	5 0.02 0.07 62.50	6719 32.95
REUP	209 1.03 2.97 37.79	5227 25.64 74.32 37.60	1445 7.09 20.55 27.63	152 0.75 2.16 21.75	0 0.00 0.00 0.00	7033 34.49
ATTRIT	87 0.43 1.79 15.73	2784 13.65 57.38 20.03	1781 8.73 36.71 34.05	200 0.98 4.12 28.61	0 0.00 0.00 0.00	4852 23.80
STILL IN	121 0.59 7.64 21.88	1152 5.65 72.77 8.29	272 1.33 17.18 5.20	38 0.19 2.40 5.44	0 0.00 0.00 0.00	1583 7.76
BAD DATA	7 0.03 3.45 1.27	130 0.64 64.04 0.94	53 0.26 26.11 1.01	10 0.05 4.93 1.43	3 0.01 1.48 37.50	203 1.00
TOTAL	553 2.71	13900 68.17	5230 25.65	699 3.43	8 0.04	20390 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 1 OF SPSTT BY HSGRAD
CONTROLLING FOR PS=NPS

SPSTT HSGRAD

FREQUENCY PERCENT ROW PCT COL PCT	HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	39354 33.66 84.29 41.78	7331 6.27 15.70 32.28	2 0.00 0.00 50.00	46687 39.94
REUP	21321 18.24 88.51 22.64	2768 2.37 11.49 12.19	1 0.00 0.00 25.00	24090 20.61
ATTRIT	28141 24.07 70.52 29.88	11764 10.06 29.48 51.80	1 0.00 0.00 25.00	39906 34.14
STILL IN	4357 3.73 87.54 4.63	620 0.53 12.46 2.73	0 0.00 0.00 0.00	4977 4.26
BAD DATA	1016 0.87 81.67 1.08	228 0.20 18.33 1.00	0 0.00 0.00 0.00	1244 1.06
TOTAL	94189 80.57	22711 19.43	4 0.00	116904 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 2 OF SPSTT BY HSGRAD
CONTROLLING FOR PS=PS

SPSTT HSGRAD

FREQUENCY / PERCENT / ROW PCT / COL PCT	HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	4736	1978	5	6719
	23.23	9.70	0.02	32.95
	70.49	29.44	0.07	
	32.77	33.36	62.50	
REUP	5436	1597	0	7033
	26.66	7.83	0.00	34.49
	77.29	22.71	0.00	
	37.61	26.94	0.00	
ATTRIT	2871	1981	0	4852
	14.08	9.72	0.00	23.80
	59.17	40.83	0.00	
	19.86	33.41	0.00	
STILL IN	1273	310	0	1583
	6.24	1.52	0.00	7.76
	80.42	19.58	0.00	
	8.81	5.23	0.00	
BAD DATA	137	63	3	203
	0.67	0.31	0.01	1.00
	67.49	31.03	1.48	
	0.95	1.06	37.50	
TOTAL	14453	5929	8	20390
	70.88	29.08	0.04	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 1 OF SPSTT BY RETHGP
CONTROLLING FOR PS=NPS

SPSTT RETHGP

FREQUENCY / PERCENT / ROW PCT / COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	31057	11643	2410	1571	6	46687
	26.57	9.96	2.06	1.34	0.01	39.94
	66.52	24.94	5.16	3.36	0.01	
	41.00	36.45	44.48	41.66	30.00	
REUP	11848	9968	1323	945	6	24090
	10.13	8.53	1.13	0.81	0.01	20.61
	49.18	41.38	5.49	3.92	0.02	
	15.64	31.21	24.42	25.06	30.00	
ATTRIT	28450	8956	1422	1071	7	39906
	24.34	7.66	1.22	0.92	0.01	34.14
	71.29	22.44	3.56	2.68	0.02	
	37.56	28.04	26.25	28.40	35.00	
STILL IN	3575	1054	215	132	1	4977
	3.06	0.90	0.18	0.11	0.00	4.26
	71.83	21.18	4.32	2.65	0.02	
	4.72	3.30	3.97	3.50	5.00	
BAD DATA	824	320	48	52	0	1244
	0.70	0.27	0.04	0.04	0.00	1.06
	66.24	25.72	3.86	4.18	0.00	
	1.09	1.00	0.89	1.38	0.00	
TOTAL	75754	31941	5418	3771	20	116904
	64.80	27.32	4.63	3.23	0.02	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 2 OF SPSTT BY RETHGP
CONTROLLING FOR PS=PS

SPSTT RETHGP

FREQUENCY / PERCENT / ROW PCT / COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	4261	1938	331	183	6	6719
	20.90	9.50	1.62	0.90	0.03	32.95
	63.42	28.84	4.93	2.72	0.09	
	32.06	34.48	34.52	36.09	54.55	
REUP	4361	2105	385	181	1	7033
	21.39	10.32	1.89	0.89	0.00	34.49
	62.01	29.93	5.47	2.57	0.01	
	32.81	37.45	40.15	35.70	9.09	
ATTRIT	3464	1131	157	99	1	4852
	16.99	5.55	0.77	0.49	0.00	23.80
	71.39	23.31	3.24	2.04	0.02	
	26.06	20.12	16.37	19.53	9.09	
STILL IN	1060	407	79	37	0	1583
	5.20	2.00	0.39	0.18	0.00	7.76
	66.96	25.71	4.99	2.34	0.00	
	7.97	7.24	8.24	7.30	0.00	
BAD DATA	146	40	7	7	3	203
	0.72	0.20	0.03	0.03	0.01	1.00
	71.92	19.70	3.45	3.45	1.48	
	1.10	0.71	0.73	1.38	27.27	
TOTAL	13292	5621	959	507	11	20390
	65.19	27.57	4.70	2.49	0.05	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 1 OF SPSTT BY SEX
CONTROLLING FOR PS=NPS

SPSTT / SEX FREQUENCY PERCENT ROW PCT COL PCT	UNKNOWN	MALE	FEMALE	TOTAL
ETS	1 0.00 0.00 33.33	41293 35.32 88.45 41.83	5393 4.61 11.55 29.67	46687 39.94
REUP	1 0.00 0.00 33.33	20187 17.27 83.80 20.45	3902 3.34 16.20 21.47	24090 20.61
ATTRIT	1 0.00 0.00 33.33	31844 27.24 79.80 32.26	8061 6.90 20.20 44.34	39906 34.14
STILL IN	0 0.00 0.00 0.00	4398 3.76 88.37 4.45	579 0.50 11.63 3.19	4977 4.26
BAD DATA	0 0.00 0.00 0.00	1001 0.86 80.47 1.01	243 0.21 19.53 1.34	1244 1.06
TOTAL	3 0.00	98723 84.45	18178 15.55	116904 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 2 OF SPSTT BY SEX
CONTROLLING FOR PS=PS

SPSTT SEX

FREQUENCY / PERCENT / ROW PCT / COL PCT	UNKNOWN	MALE	FEMALE	TOTAL
ETS	4	6005	710	6719
	0.02	29.45	3.48	32.95
	0.06	89.37	10.57	
	57.14	33.14	31.36	
REUP	0	6364	669	7033
	0.00	31.21	3.28	34.49
	0.00	90.49	9.51	
	0.00	35.12	29.55	
ATTRIT	0	4109	743	4852
	0.00	20.15	3.64	23.80
	0.00	84.69	15.31	
	0.00	22.68	32.82	
STILL IN	0	1461	122	1583
	0.00	7.17	0.60	7.76
	0.00	92.29	7.71	
	0.00	8.06	5.39	
BAD DATA	3	180	20	203
	0.01	0.88	0.10	1.00
	1.48	88.67	9.85	
	42.86	0.99	0.88	
TOTAL	7	18119	2264	20390
	0.03	88.86	11.10	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	130 0.42 28.32 11.40	280 0.90 61.00 2.80	34 0.11 7.41 0.56	13 0.04 2.83 0.16	2 0.01 0.44 0.04	0 0.00 0.00 0.00	459 1.48
HSDG	974 3.14 3.94 85.44	8661 27.89 35.06 86.58	4773 15.37 19.32 78.48	5120 16.49 20.73 62.83	5168 16.64 20.92 91.03	5 0.02 0.02 100.00	24701 79.53
GED	14 0.05 1.59 1.23	264 0.85 30.03 2.64	209 0.67 23.78 3.44	362 1.17 41.18 4.44	30 0.10 3.41 0.53	0 0.00 0.00 0.00	879 2.83
NNHSG	22 0.07 0.44 1.93	799 2.57 15.93 7.99	1066 3.43 21.25 17.53	2654 8.55 52.91 32.57	475 1.53 9.47 8.37	0 0.00 0.00 0.00	5016 16.15
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.01 100.00 0.04	0 0.00 0.00 0.00	2 0.01
TOTAL	1140 3.67	10004 32.21	6082 19.58	8149 26.24	5677 18.28	5 0.02	31057 100.00

SEVERAL PERTINENT ST. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3	67	29	49	32	0	180
	0.03	0.58	0.25	0.42	0.27	0.00	1.55
	1.67	37.22	16.11	27.22	17.78	0.00	
	17.65	10.95	3.33	1.76	0.44	0.00	
HSDG	14	491	734	2188	7114	8	10549
	0.12	4.22	6.30	18.79	61.10	0.07	90.60
	0.13	4.65	6.96	20.74	67.44	0.08	
	82.35	80.23	84.17	78.68	96.75	100.00	
GED	0	11	20	91	10	0	132
	0.00	0.09	0.17	0.78	0.09	0.00	1.13
	0.00	8.33	15.15	68.94	7.58	0.00	
	0.00	1.80	2.29	3.27	0.14	0.00	
NNHSG	0	43	89	453	197	0	782
	0.00	0.37	0.76	3.89	1.69	0.00	6.72
	0.00	5.50	11.38	57.93	25.19	0.00	
	0.00	7.03	10.21	16.29	2.68	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	17	612	872	2781	7353	8	11643
	0.15	5.26	7.49	23.89	63.15	0.07	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	13 0.54 25.49 7.10	4 0.17 7.84 1.46	17 0.71 33.33 2.58	17 0.71 33.33 1.32	0 0.00 0.00 .	51 2.12
HSDG	6 0.25 0.29 100.00	157 6.51 7.68 85.79	210 8.71 10.27 76.64	466 19.34 22.79 70.82	1206 50.04 58.97 93.56	0 0.00 0.00 .	2045 84.85
GED	0 0.00 0.00 0.00	5 0.21 7.69 2.73	11 0.46 16.92 4.01	41 1.70 63.08 6.23	8 0.33 12.31 0.62	0 0.00 0.00 .	65 2.70
NNHSG	0 0.00 0.00 0.00	8 0.33 3.21 4.37	49 2.03 19.68 17.88	134 5.56 53.82 20.36	58 2.41 23.29 4.50	0 0.00 0.00 .	249 10.33
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	6 0.25	183 7.59	274 11.37	658 27.30	1289 53.49	0 0.00	2410 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2	14	8	11	5	0	40
	0.13	0.89	0.51	0.70	0.32	0.00	2.55
	5.00	35.00	20.00	27.50	12.50	0.00	
	9.52	6.67	3.76	2.63	0.71	0.00	
HSDG	19	177	172	289	666	2	1325
	1.21	11.27	10.95	18.40	42.39	0.13	84.34
	1.43	13.36	12.98	21.81	50.26	0.15	
	90.48	84.29	80.75	69.14	94.20	100.00	
GED	0	6	3	22	3	0	34
	0.00	0.38	0.19	1.40	0.19	0.00	2.16
	0.00	17.65	8.82	64.71	8.82	0.00	
	0.00	2.86	1.41	5.26	0.42	0.00	
NNHSG	0	13	30	96	33	0	172
	0.00	0.83	1.91	6.11	2.10	0.00	10.95
	0.00	7.56	17.44	55.81	19.19	0.00	
	0.00	6.19	14.08	22.97	4.67	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	21	210	213	418	707	2	1571
	1.34	13.37	13.56	26.61	45.00	0.13	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 16.67 25.00 50.00	3 50.00 75.00 75.00	0 0.00 0.00 .	4 66.67
GED	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 16.67 50.00 50.00	1 16.67 50.00 25.00	0 0.00 0.00 .	2 33.33
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	0 0.00	0 0.00	2 33.33	4 66.67	0 0.00	6 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 6 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	48 0.41 28.24 10.64	105 0.89 61.76 2.67	12 0.10 7.06 0.50	3 0.03 1.76 0.10	2 0.02 1.18 0.10	0 0.00 0.00 0.00	170 1.43
HSDG	384 3.24 3.96 85.14	3410 28.78 35.18 86.61	1918 16.19 19.79 79.98	2078 17.54 21.44 67.93	1900 16.04 19.60 94.95	2 0.02 0.02 100.00	9692 81.80
GED	6 0.05 1.74 1.33	120 1.01 34.88 3.05	83 0.70 24.13 3.46	128 1.08 37.21 4.18	7 0.06 2.03 0.35	0 0.00 0.00 0.00	344 2.90
NNHSG	13 0.11 0.79 2.88	302 2.55 18.39 7.67	385 3.25 23.45 16.06	850 7.17 51.77 27.79	92 0.78 5.60 4.60	0 0.00 0.00 0.00	1642 13.86
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	451 3.81	3937 33.23	2398 20.24	3059 25.82	2001 16.89	2 0.02	11848 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 7 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.01 0.81 6.67	37 0.37 29.84 7.20	28 0.28 22.58 3.05	33 0.33 26.61 1.16	25 0.25 20.16 0.44	0 0.00 0.00 0.00	124 1.24
HSDG	12 0.12 0.13 80.00	453 4.54 4.87 88.13	801 8.04 8.62 87.25	2462 24.70 26.49 86.57	5565 55.83 59.88 98.06	1 0.01 0.01 50.00	9294 93.24
GED	0 0.00 0.00 0.00	8 0.08 6.90 1.56	24 0.24 20.69 2.61	78 0.78 67.24 2.74	6 0.06 5.17 0.11	0 0.00 0.00 0.00	116 1.16
NNHSG	2 0.02 0.46 13.33	16 0.16 3.69 3.11	65 0.65 14.98 7.08	271 2.72 62.44 9.53	79 0.79 18.20 1.39	1 0.01 0.23 50.00	434 4.35
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	15 0.15	514 5.16	918 9.21	2844 28.53	5675 56.93	2 0.02	9968 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 8 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	9 0.68 22.50 10.00	4 0.30 10.00 2.82	12 0.91 30.00 3.36	15 1.13 37.50 2.06	0 0.00 0.00 .	40 3.02
HSDG	5 0.38 0.43 100.00	72 5.44 6.26 80.00	122 9.22 10.61 85.92	258 19.50 22.43 72.27	693 52.38 60.26 95.06	0 0.00 0.00 .	1150 86.92
GED	0 0.00 0.00 0.00	4 0.30 12.12 4.44	4 0.30 12.12 2.82	22 1.66 66.67 6.16	3 0.23 9.09 0.41	0 0.00 0.00 .	33 2.49
NNHSG	0 0.00 0.00 0.00	5 0.38 5.00 5.56	12 0.91 12.00 8.45	65 4.91 65.00 18.21	18 1.36 18.00 2.47	0 0.00 0.00 .	100 7.56
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	5 0.38	90 6.80	142 10.73	357 26.98	729 55.10	0 0.00	1323 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 9 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	5 0.53 19.23 5.21	7 0.74 26.92 6.60	7 0.74 26.92 2.73	7 0.74 26.92 1.46	0 0.00 0.00 0.00	26 2.75
HSDG	5 0.53 0.61 100.00	81 8.57 9.89 84.38	81 8.57 9.89 76.42	189 20.00 23.08 73.83	462 48.89 56.41 96.05	1 0.11 0.12 100.00	819 86.67
GED	0 0.00 0.00 0.00	2 0.21 13.33 2.08	3 0.32 20.00 2.83	10 1.06 66.67 3.91	0 0.00 0.00 0.00	0 0.00 0.00 0.00	15 1.59
NNHSG	0 0.00 0.00 0.00	8 0.85 9.52 8.33	15 1.59 17.86 14.15	49 5.19 58.33 19.14	12 1.27 14.29 2.49	0 0.00 0.00 0.00	84 8.89
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.11 100.00 0.39	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.11
TOTAL	5 0.53	96 10.16	106 11.22	256 27.09	481 50.90	1 0.11	945 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 10 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 16.67 16.67 100.00	0 0.00 0.00 .	2 33.33 33.33 100.00	3 50.00 50.00 100.00	0 0.00 0.00 .	6 100.00
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 16.67	0 0.00	2 33.33	3 50.00	0 0.00	6 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 11 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=WHITE

EDLVL / TSC44 (FREQUENCY / PERCENT / ROW PCT / COL PCT)	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	48 0.17 20.08 8.39	155 0.54 64.85 2.29	24 0.08 10.04 0.42	10 0.04 4.18 0.10	2 0.01 0.84 0.04	0 0.00 0.00 0.00	239 0.84
HSDG	478 1.68 2.59 83.57	5060 17.79 27.47 74.72	3494 12.28 18.97 61.35	4733 16.64 25.69 47.16	4652 16.35 25.25 86.63	4 0.01 0.02 100.00	18421 64.75
GED	15 0.05 1.10 2.62	346 1.22 25.33 5.11	358 1.26 26.21 6.29	614 2.16 44.95 6.12	33 0.12 2.42 0.61	0 0.00 0.00 0.00	1366 4.80
NNHSG	31 0.11 0.37 5.42	1211 4.26 14.38 17.88	1819 6.39 21.60 31.94	4679 16.45 55.55 46.62	683 2.40 8.11 12.72	0 0.00 0.00 0.00	8423 29.61
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00 100.00 0.01	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00
TOTAL	572 2.01	6772 23.80	5695 20.02	10037 35.28	5370 18.88	4 0.01	28450 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 12 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=BLACK

EDLVL TSC44

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.01 0.81 12.50	47 0.52 38.21 8.56	29 0.32 23.58 3.38	34 0.38 27.64 1.17	12 0.13 9.76 0.26	0 0.00 0.00 0.00	123 1.37
HSDG	7 0.08 0.09 87.50	408 4.56 5.51 74.32	629 7.02 8.49 73.40	2002 22.35 27.04 68.61	4354 48.62 58.80 94.26	5 0.06 0.07 100.00	7405 82.68
GED	0 0.00 0.00 0.00	29 0.32 12.61 5.28	41 0.46 17.83 4.78	148 1.65 64.35 5.07	12 0.13 5.22 0.26	0 0.00 0.00 0.00	230 2.57
NNHSG	0 0.00 0.00 0.00	65 0.73 5.43 11.84	158 1.76 13.19 18.44	734 8.20 61.27 25.15	241 2.69 20.12 5.22	0 0.00 0.00 0.00	1198 13.38
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	8 0.09	549 6.13	857 9.57	2918 32.58	4619 51.57	5 0.06	8956 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 13 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.07 2.38 25.00	11 0.77 26.19 9.57	7 0.49 16.67 4.43	8 0.56 19.05 1.83	15 1.05 35.71 2.12	0 0.00 0.00 .	42 2.95
HSDG	3 0.21 0.27 75.00	75 5.27 6.87 65.22	113 7.95 10.35 71.52	258 18.14 23.63 59.04	643 45.22 58.88 90.82	0 0.00 0.00 .	1092 76.79
GED	0 0.00 0.00 0.00	11 0.77 18.33 9.57	8 0.56 13.33 5.06	33 2.32 55.00 7.55	8 0.56 13.33 1.13	0 0.00 0.00 .	60 4.22
NNHSG	0 0.00 0.00 0.00	18 1.27 7.89 15.65	30 2.11 13.16 18.99	138 9.70 60.53 31.58	42 2.95 18.42 5.93	0 0.00 0.00 .	228 16.03
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	4 0.28	115 8.09	158 11.11	437 30.73	708 49.79	0 0.00	1422 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 14 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=OTHER

EDLVL / TSC44 (FREQUENCY / PERCENT / ROW PCT / COL PCT)	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	4	7	3	7	0	22
	0.09	0.37	0.65	0.28	0.65	0.00	2.05
	4.55	18.18	31.82	13.64	31.82	0.00	
	8.33	3.05	4.73	0.88	1.60	.	
HSDG	10	99	93	204	387	0	793
	0.93	9.24	8.68	19.05	36.13	0.00	74.04
	1.26	12.48	11.73	25.73	48.80	0.00	
	83.33	75.57	62.84	59.65	88.36	.	
GED	0	6	14	11	4	0	35
	0.00	0.56	1.31	1.03	0.37	0.00	3.27
	0.00	17.14	40.00	31.43	11.43	0.00	
	0.00	4.58	9.46	3.22	0.91	.	
NNHSG	1	22	34	124	40	0	221
	0.09	2.05	3.17	11.58	3.73	0.00	20.63
	0.45	9.95	15.38	56.11	18.10	0.00	
	8.33	16.79	22.97	36.26	9.13	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	12	131	148	342	438	0	1071
	1.12	12.23	13.82	31.93	40.90	0.00	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 15 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 0.00	1 14.29 25.00 100.00	2 28.57 50.00 50.00	1 14.29 25.00 100.00	0 0.00 0.00 .	4 57.14
GED	0 0.00 0.00 .	1 14.29 100.00 100.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 14.29
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 28.57 100.00 50.00	0 0.00 0.00 0.00	0 0.00 0.00 .	2 28.57
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 14.29	1 14.29	4 57.14	1 14.29	0 0.00	7 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 16 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=WHITE

EDLVL / TSC44 FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	119 3.33 33.81 36.73	223 6.24 63.35 15.49	9 0.25 2.56 1.36	1 0.03 0.28 0.13	0 0.00 0.00 0.00	0 0.00 0.00 .	352 9.85
HSDG	201 5.62 7.42 62.04	1092 30.55 40.31 75.83	540 15.10 19.93 81.57	497 13.90 18.35 66.62	379 10.60 13.99 94.04	0 0.00 0.00 .	2709 75.78
GED	2 0.06 1.94 0.62	45 1.26 43.69 3.13	19 0.53 18.45 2.87	34 0.95 33.01 4.56	3 0.08 2.91 0.74	0 0.00 0.00 .	103 2.88
NNHSG	2 0.06 0.49 0.62	80 2.24 19.46 5.56	94 2.63 22.87 14.20	214 5.99 52.07 28.69	21 0.59 5.11 5.21	0 0.00 0.00 .	411 11.50
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	324 9.06	1440 40.28	662 18.52	746 20.87	403 11.27	0 0.00	3575 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 17 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=BLACK

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2	26	14	15	2	0	59
	0.19	2.47	1.33	1.42	0.19	0.00	5.60
	3.39	44.07	23.73	25.42	3.39	0.00	
	33.33	23.01	10.77	4.59	0.42	.	
HSDG	4	81	106	265	470	0	926
	0.38	7.69	10.06	25.14	44.59	0.00	87.86
	0.43	8.75	11.45	28.62	50.76	0.00	
	66.67	71.68	81.54	81.04	98.33	.	
GED	0	3	2	6	0	0	11
	0.00	0.28	0.19	0.57	0.00	0.00	1.04
	0.00	27.27	18.18	54.55	0.00	0.00	
	0.00	2.65	1.54	1.83	0.00	.	
NNHSG	0	3	8	41	6	0	58
	0.00	0.28	0.76	3.89	0.57	0.00	5.50
	0.00	5.17	13.79	70.69	10.34	0.00	
	0.00	2.65	6.15	12.54	1.26	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	6	113	130	327	478	0	1054
	0.57	10.72	12.33	31.02	45.35	0.00	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 18 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	0	3	4	4	0	12
	0.47	0.00	1.40	1.86	1.86	0.00	5.58
	8.33	0.00	25.00	33.33	33.33	0.00	
	50.00	0.00	13.04	5.00	4.55	.	
HSDG	1	18	15	63	81	0	178
	0.47	8.37	6.98	29.30	37.67	0.00	82.79
	0.56	10.11	8.43	35.39	45.51	0.00	
	50.00	81.82	65.22	78.75	92.05	.	
GED	0	2	1	3	0	0	6
	0.00	0.93	0.47	1.40	0.00	0.00	2.79
	0.00	33.33	16.67	50.00	0.00	0.00	
	0.00	9.09	4.35	3.75	0.00	.	
NNHSG	0	2	4	10	3	0	19
	0.00	0.93	1.86	4.65	1.40	0.00	8.84
	0.00	10.53	21.05	52.63	15.79	0.00	
	0.00	9.09	17.39	12.50	3.41	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	2	22	23	80	88	0	215
	0.93	10.23	10.70	37.21	40.93	0.00	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 19 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	4 3.03 33.33 57.14	5 3.79 41.67 16.67	2 1.52 16.67 18.18	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.76 8.33 100.00	12 9.09
HSDG	3 2.27 2.78 42.86	24 18.18 22.22 80.00	9 6.82 8.33 81.82	28 21.21 25.93 73.68	44 33.33 40.74 97.78	0 0.00 0.00 0.00	108 81.82
GED	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 3.03 100.00 10.53	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 3.03
NNHSG	0 0.00 0.00 0.00	1 0.76 12.50 3.33	0 0.00 0.00 0.00	6 4.55 75.00 15.79	1 0.76 12.50 2.22	0 0.00 0.00 0.00	8 6.06
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	7 5.30	30 22.73	11 8.33	38 28.79	45 34.09	1 0.76	132 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 20 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 21 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3 0.36 23.08 9.68	8 0.97 61.54 3.45	1 0.12 7.69 0.66	1 0.12 7.69 0.41	0 0.00 0.00 0.00	0 0.00 0.00 .	13 1.58
HSDG	26 3.16 4.09 83.87	193 23.42 30.39 83.19	124 15.05 19.53 82.12	149 18.08 23.46 60.57	143 17.35 22.52 87.20	0 0.00 0.00 .	635 77.06
GED	2 0.24 6.67 6.45	7 0.85 23.33 3.02	5 0.61 16.67 3.31	13 1.58 43.33 5.28	3 0.36 10.00 1.83	0 0.00 0.00 .	30 3.64
NNHSG	0 0.00 0.00 0.00	24 2.91 16.44 10.34	21 2.55 14.38 13.91	83 10.07 56.85 33.74	18 2.18 12.33 10.98	0 0.00 0.00 .	146 17.72
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	31 3.76	232 28.16	151 18.33	246 29.85	164 19.90	0 0.00	824 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 22 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	4 1.25 40.00 25.00	3 0.94 30.00 10.00	2 0.63 20.00 2.11	1 0.31 10.00 0.56	0 0.00 0.00 .	10 3.13
HSDG	0 0.00 0.00 .	7 2.19 2.55 43.75	22 6.88 8.03 73.33	76 23.75 27.74 80.00	169 52.81 61.68 94.41	0 0.00 0.00 .	274 85.63
GED	0 0.00 0.00 .	1 0.31 16.67 6.25	0 0.00 0.00 0.00	3 0.94 50.00 3.16	2 0.63 33.33 1.12	0 0.00 0.00 .	6 1.88
NNHSG	0 0.00 0.00 .	4 1.25 13.33 25.00	5 1.56 16.67 16.67	14 4.38 46.67 14.74	7 2.19 23.33 3.91	0 0.00 0.00 .	30 9.38
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	16 5.00	30 9.38	95 29.69	179 55.94	0 0.00	320 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 23 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 2.08 100.00 4.35	0 0.00 0.00 .	1 2.08
HSDG	0 0.00 0.00 .	6 12.50 15.38 85.71	3 6.25 7.69 60.00	10 20.83 25.64 76.92	20 41.67 51.28 86.96	0 0.00 0.00 .	39 81.25
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 2.08 100.00 7.69	0 0.00 0.00 0.00	0 0.00 0.00 .	1 2.08
NNHSG	0 0.00 0.00 .	1 2.08 14.29 14.29	2 4.17 28.57 40.00	2 4.17 28.57 15.38	2 4.17 28.57 8.70	0 0.00 0.00 .	7 14.58
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	7 14.58	5 10.42	13 27.08	23 47.92	0 0.00	48 100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 24 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	1 1.92 100.00 16.67	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 1.92
HSDG	0 0.00 0.00 .	5 9.62 11.63 83.33	4 7.69 9.30 100.00	9 17.31 20.93 64.29	25 48.08 58.14 89.29	0 0.00 0.00 .	43 82.69
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 9.62 62.50 35.71	3 5.77 37.50 10.71	0 0.00 0.00 .	8 15.38
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	6 11.54	4 7.69	14 26.92	28 53.85	0 0.00	52 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 25 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 26 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	24	46	8	3	3	11	95
	0.56	1.08	0.19	0.07	0.07	0.26	2.23
	25.26	48.42	8.42	3.16	3.16	11.58	
	13.64	3.65	1.17	0.33	0.54	1.66	
HSDG	135	941	413	475	358	425	2747
	3.17	22.08	9.69	11.15	8.40	9.97	64.47
	4.91	34.26	15.03	17.29	13.03	15.47	
	76.70	74.68	60.47	51.52	64.27	64.10	
GED	17	245	234	412	137	183	1228
	0.40	5.75	5.49	9.67	3.22	4.29	28.82
	1.38	19.95	19.06	33.55	11.16	14.90	
	9.66	19.44	34.26	44.69	24.60	27.60	
NNHSG	0	28	28	32	59	44	191
	0.00	0.66	0.66	0.75	1.38	1.03	4.48
	0.00	14.66	14.66	16.75	30.89	23.04	
	0.00	2.22	4.10	3.47	10.59	6.64	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	176	1260	683	922	557	663	4261
	4.13	29.57	16.03	21.64	13.07	15.56	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 27 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.05 4.35 25.00	8 0.41 34.78 5.67	4 0.21 17.39 1.89	8 0.41 34.78 1.72	1 0.05 4.35 0.16	1 0.05 4.35 0.20	23 1.19
HSDG	3 0.15 0.20 75.00	100 5.16 6.71 70.92	155 8.00 10.40 73.11	321 16.56 21.54 69.18	506 26.11 33.96 82.68	405 20.90 27.18 80.20	1490 76.88
GED	0 0.00 0.00 0.00	32 1.65 9.55 22.70	45 2.32 13.43 21.23	123 6.35 36.72 26.51	76 3.92 22.69 12.42	59 3.04 17.61 11.68	335 17.29
NNHSG	0 0.00 0.00 0.00	1 0.05 1.12 0.71	8 0.41 8.99 3.77	12 0.62 13.48 2.59	29 1.50 32.58 4.74	39 2.01 43.82 7.72	89 4.59
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.05 100.00 0.20	1 0.05
TOTAL	4 0.21	141 7.28	212 10.94	464 23.94	612 31.58	505 26.06	1938 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 28 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.60 18.18 50.00	4 1.21 36.36 13.79	0 0.00 0.00 0.00	4 1.21 36.36 4.35	1 0.30 9.09 0.83	0 0.00 0.00 0.00	11 3.32
HSDG	2 0.60 0.87 50.00	22 6.65 9.52 75.86	20 6.04 8.66 62.50	55 16.62 23.81 59.78	91 27.49 39.39 75.83	41 12.39 17.75 75.93	231 69.79
GED	0 0.00 0.00 0.00	1 0.30 1.27 3.45	12 3.63 15.19 37.50	32 9.67 40.51 34.78	25 7.55 31.65 20.83	9 2.72 11.39 16.67	79 23.87
NNHSG	0 0.00 0.00 0.00	2 0.60 20.00 6.90	0 0.00 0.00 0.00	1 0.30 10.00 1.09	3 0.91 30.00 2.50	4 1.21 40.00 7.41	10 3.02
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	4 1.21	29 8.76	32 9.67	92 27.79	120 36.25	54 16.31	331 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 29 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
HSDG	3 1.64 2.19 100.00	22 12.02 16.06 75.86	16 8.74 11.68 66.67	28 15.30 20.44 66.67	43 23.50 31.39 81.13	25 13.66 18.25 78.13	137 74.86
GED	0 0.00 0.00 0.00	7 3.83 18.92 24.14	8 4.37 21.62 33.33	11 6.01 29.73 26.19	7 3.83 18.92 13.21	4 2.19 10.81 12.50	37 20.22
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 1.64 33.33 7.14	3 1.64 33.33 5.66	3 1.64 33.33 9.38	9 4.92
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	3 1.64	29 15.85	24 13.11	42 22.95	53 28.96	32 17.49	183 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 30 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 33.33 100.00 66.67	0 0.00 0.00 0.00	0 0.00 0.00 .	2 33.33
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 0.00 .	1 16.67 25.00 100.00	1 16.67 25.00 100.00	1 16.67 25.00 33.33	1 16.67 25.00 100.00	0 0.00 0.00 .	4 66.67
TOTAL	0 0.00	1 16.67	1 16.67	3 50.00	1 16.67	0 0.00	6 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 31 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	39	65	8	1	1	16	130
	0.89	1.49	0.18	0.02	0.02	0.37	2.98
	30.00	50.00	6.15	0.77	0.77	12.31	
	13.83	4.12	1.08	0.14	0.24	2.55	
HSDG	221	1209	498	431	285	469	3113
	5.07	27.72	11.42	9.88	6.54	10.75	71.38
	7.10	38.84	16.00	13.85	9.16	15.07	
	78.37	76.66	67.39	59.53	69.17	74.80	
GED	22	286	213	269	100	129	1019
	0.50	6.56	4.88	6.17	2.29	2.96	23.37
	2.16	28.07	20.90	26.40	9.81	12.66	
	7.80	18.14	28.82	37.15	24.27	20.57	
NNHSG	0	17	20	23	26	13	99
	0.00	0.39	0.46	0.53	0.60	0.30	2.27
	0.00	17.17	20.20	23.23	26.26	13.13	
	0.00	1.08	2.71	3.18	6.31	2.07	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	282	1577	739	724	412	627	4361
	6.47	36.16	16.95	16.60	9.45	14.38	100.00

SEVERAL PERTINENT S. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 32 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=BLACK

EDLVL TSC44

EDLVL	FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	FREQUENCY	2	12	15	11	4	4	48
	PERCENT	0.10	0.57	0.71	0.52	0.19	0.19	2.28
	ROW PCT	4.17	25.00	31.25	22.92	8.33	8.33	
	COL PCT	16.67	6.00	5.64	1.83	0.63	1.01	
HSDG	FREQUENCY	10	156	200	451	540	344	1701
	PERCENT	0.48	7.41	9.50	21.43	25.65	16.34	80.81
	ROW PCT	0.59	9.17	11.76	26.51	31.75	20.22	
	COL PCT	83.33	78.00	75.19	75.17	85.58	86.87	
GED	FREQUENCY	0	30	49	129	71	36	315
	PERCENT	0.00	1.43	2.33	6.13	3.37	1.71	14.96
	ROW PCT	0.00	9.52	15.56	40.95	22.54	11.43	
	COL PCT	0.00	15.00	18.42	21.50	11.25	9.09	
NNHSG	FREQUENCY	0	2	2	9	16	12	41
	PERCENT	0.00	0.10	0.10	0.43	0.76	0.57	1.95
	ROW PCT	0.00	4.88	4.88	21.95	39.02	29.27	
	COL PCT	0.00	1.00	0.75	1.50	2.54	3.03	
UNKNOWN	FREQUENCY	0	0	0	0	0	0	0
	PERCENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ROW PCT	.	.	.	.	.	.	
	COL PCT	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL		12	200	266	600	631	396	2105
		0.57	9.50	12.64	28.50	29.98	18.81	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 33 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	6	4	4	8	1	23
	0.00	1.56	1.04	1.04	2.08	0.26	5.97
	0.00	26.09	17.39	17.39	34.78	4.35	
	0.00	13.64	8.16	3.42	6.84	1.79	
HSDG	2	33	30	81	98	38	282
	0.52	8.57	7.79	21.04	25.45	9.87	73.25
	0.71	11.70	10.64	28.72	34.75	13.48	
	100.00	75.00	61.22	69.23	83.76	67.86	
GED	0	5	14	30	11	15	75
	0.00	1.30	3.64	7.79	2.86	3.90	19.48
	0.00	6.67	18.67	40.00	14.67	20.00	
	0.00	11.36	28.57	25.64	9.40	26.79	
NNHSG	0	0	1	2	0	2	5
	0.00	0.00	0.26	0.52	0.00	0.52	1.30
	0.00	0.00	20.00	40.00	0.00	40.00	
	0.00	0.00	2.04	1.71	0.00	3.57	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	2	44	49	117	117	56	385
	0.52	11.43	12.73	30.39	30.39	14.55	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 34 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 1.10 25.00 40.00	2 1.10 25.00 5.71	0 0.00 0.00 0.00	3 1.66 37.50 6.25	1 0.55 12.50 1.82	0 0.00 0.00 0.00	8 4.42
HSDG	3 1.66 2.31 60.00	26 14.36 20.00 74.29	11 6.08 8.46 73.33	32 17.68 24.62 66.67	37 20.44 28.46 67.27	21 11.60 16.15 91.30	130 71.82
GED	0 0.00 0.00 0.00	7 3.87 19.44 20.00	4 2.21 11.11 26.67	13 7.18 36.11 27.08	12 6.63 33.33 21.82	0 0.00 0.00 0.00	36 19.89
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 2.76 71.43 9.09	2 1.10 28.57 8.70	7 3.87
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	5 2.76	35 19.34	15 8.29	48 26.52	55 30.39	23 12.71	181 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 35 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	1 100.00
GED	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	1 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 36 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	14 0.40 19.44 9.86	43 1.24 59.72 4.41	5 0.14 6.94 0.76	2 0.06 2.78 0.22	0 0.00 0.00 0.00	8 0.23 11.11 2.27	72 2.08
HSDG	116 3.35 6.27 81.69	628 18.13 33.96 64.41	324 9.35 17.52 49.39	356 10.28 19.25 38.74	251 7.25 13.57 59.90	174 5.02 9.41 49.29	1849 53.38
GED	12 0.35 0.86 8.45	288 8.31 20.60 29.54	311 8.98 22.25 47.41	519 14.98 37.12 56.47	134 3.87 9.59 31.98	134 3.87 9.59 37.96	1398 40.36
NNHSG	0 0.00 0.00 0.00	16 0.46 11.03 1.64	16 0.46 11.03 2.44	42 1.21 28.97 4.57	34 0.98 23.45 8.11	37 1.07 25.52 10.48	145 4.19
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	142 4.10	975 28.15	656 18.94	919 26.53	419 12.10	353 10.19	3464 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 37 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	4 0.35 44.44 3.57	1 0.09 11.11 0.81	1 0.09 11.11 0.27	2 0.18 22.22 0.58	1 0.09 11.11 0.54	9 0.80
HSDG	0 0.00 0.00 .	85 7.52 10.77 75.89	78 6.90 9.89 62.90	215 19.01 27.25 58.27	273 24.14 34.60 79.82	138 12.20 17.49 75.00	789 69.76
GED	0 0.00 0.00 .	22 1.95 7.69 19.64	43 3.80 15.03 34.68	141 12.47 49.30 38.21	52 4.60 18.18 15.20	28 2.48 9.79 15.22	286 25.29
NNHSG	0 0.00 0.00 .	1 0.09 2.13 0.89	2 0.18 4.26 1.61	12 1.06 25.53 3.25	15 1.33 31.91 4.39	17 1.50 36.17 9.24	47 4.16
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	112 9.90	124 10.96	369 32.63	342 30.24	184 16.27	1131 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 38 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.64 20.00 100.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 2.55 80.00 7.14	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 3.18
HSDG	0 0.00 0.00 0.00	12 7.64 13.48 92.31	8 5.10 8.99 38.10	22 14.01 24.72 39.29	38 24.20 42.70 69.09	9 5.73 10.11 81.82	89 56.69
GED	0 0.00 0.00 0.00	1 0.64 1.69 7.69	13 8.28 22.03 61.90	30 19.11 50.85 53.57	13 8.28 22.03 23.64	2 1.27 3.39 18.18	59 37.58
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 2.55 100.00 7.27	0 0.00 0.00 0.00	4 2.55
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	1 0.64	13 8.28	21 13.38	56 35.67	55 35.03	11 7.01	157 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 39 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=OTHER

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	0	0	1	0	0	1
	0.00	0.00	0.00	1.01	0.00	0.00	1.01
	0.00	0.00	0.00	100.00	0.00	0.00	
	0.00	0.00	0.00	3.45	0.00	0.00	
HSDG	0	13	4	13	18	9	57
	0.00	13.13	4.04	13.13	18.18	9.09	57.58
	0.00	22.81	7.02	22.81	31.58	15.79	
	0.00	68.42	33.33	44.83	69.23	75.00	
GED	1	6	7	15	6	2	37
	1.01	6.06	7.07	15.15	6.06	2.02	37.37
	2.70	16.22	18.92	40.54	16.22	5.41	
	100.00	31.58	58.33	51.72	23.08	16.67	
NNHSG	0	0	1	0	2	1	4
	0.00	0.00	1.01	0.00	2.02	1.01	4.04
	0.00	0.00	25.00	0.00	50.00	25.00	
	0.00	0.00	8.33	0.00	7.69	8.33	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	1	19	12	29	26	12	99
	1.01	19.19	12.12	29.29	26.26	12.12	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 40 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
GED	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00

SEVERAL PERTINENT S) STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 41 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	27 2.55 28.13 25.71	58 5.47 60.42 14.99	3 0.28 3.13 2.65	2 0.19 2.08 1.35	0 0.00 0.00 0.00	6 0.57 6.25 2.51	96 9.06
HSDG	75 7.08 10.22 71.43	279 26.32 38.01 72.09	69 6.51 9.40 61.06	76 7.17 10.35 51.35	49 4.62 6.68 72.06	186 17.55 25.34 77.82	734 69.25
GED	3 0.28 1.42 2.86	48 4.53 22.64 12.40	39 3.68 18.40 34.51	68 6.42 32.08 45.95	17 1.60 8.02 25.00	37 3.49 17.45 15.48	212 20.00
NNHSG	0 0.00 0.00 0.00	2 0.19 11.11 0.52	2 0.19 11.11 1.77	2 0.19 11.11 1.35	2 0.19 11.11 2.94	10 0.94 55.56 4.18	18 1.70
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	105 9.91	387 36.51	113 10.66	148 13.96	68 6.42	239 22.55	1060 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 42 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.25 5.26 100.00	6 1.47 31.58 20.69	6 1.47 31.58 16.67	3 0.74 15.79 5.00	1 0.25 5.26 1.08	2 0.49 10.53 1.06	19 4.67
HSDG	0 0.00 0.00 0.00	22 5.41 6.55 75.86	24 5.90 7.14 66.67	49 12.04 14.58 81.67	79 19.41 23.51 84.95	162 39.80 48.21 86.17	336 82.56
GED	0 0.00 0.00 0.00	1 0.25 2.70 3.45	6 1.47 16.22 16.67	6 1.47 16.22 10.00	10 2.46 27.03 10.75	14 3.44 37.84 7.45	37 9.09
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.49 13.33 3.33	3 0.74 20.00 3.23	10 2.46 66.67 5.32	15 3.69
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	1 0.25	29 7.13	36 8.85	60 14.74	93 22.85	188 46.19	407 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 43 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.27 50.00 9.09	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.27 50.00 3.85	2 2.53
HSDG	1 1.27 1.72 100.00	8 10.13 13.79 88.89	4 5.06 6.90 36.36	17 21.52 29.31 89.47	10 12.66 17.24 76.92	18 22.78 31.03 69.23	58 73.42
GED	0 0.00 0.00 0.00	1 1.27 6.25 11.11	6 7.59 37.50 54.55	2 2.53 12.50 10.53	3 3.80 18.75 23.08	4 5.06 25.00 15.38	16 20.25
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 3.80 100.00 11.54	3 3.80
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	1 1.27	9 11.39	11 13.92	19 24.05	13 16.46	26 32.91	79 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 44 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	2 5.41 50.00 25.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 2.70 25.00 14.29	1 2.70 25.00 8.33	4 10.81
HSDG	1 2.70 4.17 100.00	4 10.81 16.67 50.00	0 0.00 0.00 0.00	5 13.51 20.83 62.50	4 10.81 16.67 57.14	10 27.03 41.67 83.33	24 64.86
GED	0 0.00 0.00 0.00	2 5.41 28.57 25.00	0 0.00 0.00 0.00	3 8.11 42.86 37.50	1 2.70 14.29 14.29	1 2.70 14.29 8.33	7 18.92
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 2.70 50.00 100.00	0 0.00 0.00 0.00	1 2.70 50.00 14.29	0 0.00 0.00 0.00	2 5.41
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	1 2.70	8 21.62	1 2.70	8 21.62	7 18.92	12 32.43	37 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 45 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 46 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.68 25.00 11.11	3 2.05 75.00 7.32	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 2.74
HSDG	7 4.79 7.69 77.78	30 20.55 32.97 73.17	11 7.53 12.09 39.29	16 10.96 17.58 47.06	11 7.53 12.09 84.62	16 10.96 17.58 76.19	91 62.33
GED	1 0.68 2.33 11.11	8 5.48 18.60 19.51	15 10.27 34.88 53.57	15 10.27 34.88 44.12	1 0.68 2.33 7.69	3 2.05 6.98 14.29	43 29.45
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.37 25.00 7.14	3 2.05 37.50 8.82	1 0.68 12.50 7.69	2 1.37 25.00 9.52	8 5.48
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	9 6.16	41 28.08	28 19.18	34 23.29	13 8.90	21 14.38	146 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 47 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=BLACK

EDLVL / FREQUENCY PERCENT ROW PCT COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	1 2.50 100.00 25.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 2.50
HSDG	0 0.00 0.00 .	1 2.50 3.45 25.00	4 10.00 13.79 100.00	7 17.50 24.14 70.00	7 17.50 24.14 77.78	10 25.00 34.48 76.92	29 72.50
GED	0 0.00 0.00 .	2 5.00 25.00 50.00	0 0.00 0.00 0.00	2 5.00 25.00 20.00	2 5.00 25.00 22.22	2 5.00 25.00 15.38	8 20.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 2.50 50.00 10.00	0 0.00 0.00 0.00	1 2.50 50.00 7.69	2 5.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	4 10.00	4 10.00	10 25.00	9 22.50	13 32.50	40 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

TABLE 48 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL TSC44

EDLVL	FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	FREQUENCY	1	0	0	0	0	0	1
	PERCENT	14.29	0.00	0.00	0.00	0.00	0.00	14.29
	ROW PCT	100.00	0.00	0.00	0.00	0.00	0.00	
	COL PCT	100.00	0.00	.	0.00	0.00	.	
HSDG	FREQUENCY	0	1	0	2	2	0	5
	PERCENT	0.00	14.29	0.00	28.57	28.57	0.00	71.43
	ROW PCT	0.00	20.00	0.00	40.00	40.00	0.00	
	COL PCT	0.00	100.00	.	66.67	100.00	.	
GED	FREQUENCY	0	0	0	1	0	0	1
	PERCENT	0.00	0.00	0.00	14.29	0.00	0.00	14.29
	ROW PCT	0.00	0.00	0.00	100.00	0.00	0.00	
	COL PCT	0.00	0.00	.	33.33	0.00	.	
NNHSG	FREQUENCY	0	0	0	0	0	0	0
	PERCENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ROW PCT	.	.	.	.	.	.	
	COL PCT	0.00	0.00	.	0.00	0.00	.	
UNKNOWN	FREQUENCY	0	0	0	0	0	0	0
	PERCENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ROW PCT	.	.	.	.	.	.	
	COL PCT	0.00	0.00	.	0.00	0.00	.	
TOTAL		1	1	0	3	2	0	7
		14.29	14.29	0.00	42.86	28.57	0.00	100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 49 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	1 14.29 100.00 25.00	1 14.29
HSDG	0 0.00 0.00 .	2 28.57 40.00 100.00	1 14.29 20.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	2 28.57 40.00 50.00	5 71.43
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	1 14.29 100.00 25.00	1 14.29
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	2 28.57	1 14.29	0 0.00	0 0.00	4 57.14	7 100.00

THIS IS FOR FISCAL YEAR 1981

TABLE 50 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 0.00 .	2 66.67 66.67 100.00	0 0.00 0.00 .	1 33.33 33.33 100.00	0 0.00 0.00 .	0 0.00 0.00 .	3 100.00
TOTAL	0 0.00	2 66.67	0 0.00	1 33.33	0 0.00	0 0.00	3 100.00

SEVERAL PERTINENT S1 STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
AFQT44	137294	45.48	23.68	0	99.00	99.00	52.06
GT80	137294	95.85	21.50	0	130.00	130.00	22.42

SEVERAL PERTINENT S1. ЗTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
SPSTT=ETS							
AFQT44	53406	45.88	24.32	0	99.00	99.00	53.02
GT80	53406	96.06	21.59	0	130.00	130.00	22.47
SPSTT=REUP							
AFQT44	31123	44.00	24.13	0	99.00	99.00	54.84
GT80	31123	94.05	23.55	0	130.00	130.00	25.04
SPSTT=ATTRIT							
AFQT44	44758	45.02	21.62	0	99.00	99.00	48.03
GT80	44758	96.66	17.83	0	130.00	130.00	18.45
SPSTT=STILL IN							
AFQT44	6560	52.33	27.93	0	99.00	99.00	53.36
GT80	6560	97.19	30.83	0	130.00	130.00	31.72
SPSTT=BAD DATA							
AFQT44	1447	45.70	23.86	0	99.00	99.00	52.20
GT80	1447	95.98	21.79	0	130.00	130.00	22.70

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
PS=NPS							
AFQT44	116904	45.80	22.62	0	99.00	99.00	49.39
GT80	116904	97.68	15.28	0	130.00	130.00	15.64
PS=PS							
AFQT44	20390	43.65	28.95	0	99.00	99.00	66.31
GT80	20390	85.37	40.54	0	130.00	130.00	47.48

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1981

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
PS=NPS SPSTT=ETS							
AFQT44	46687	46.59	23.55	0	99.00	99.00	50.54
GT80	46687	98.03	15.92	0	130.00	130.00	16.24
PS=NPS SPSTT=REUP							
AFQT44	24090	43.58	22.40	0	99.00	99.00	51.39
GT80	24090	96.05	15.23	0	130.00	130.00	15.86
PS=NPS SPSTT=ATTRIT							
AFQT44	39906	45.02	20.97	0	99.00	99.00	46.57
GT80	39906	97.48	14.24	0	130.00	130.00	14.60
PS=NPS SPSTT=STILL IN							
AFQT44	4977	55.43	24.69	0	99.00	99.00	44.54
GT80	4977	103.98	15.76	0	130.00	130.00	15.16
PS=NPS SPSTT=BAD DATA							
AFQT44	1244	45.76	22.73	12.00	99.00	87.00	49.67
GT80	1244	97.71	15.22	61.00	130.00	69.00	15.57
PS=PS SPSTT=ETS							
AFQT44	6719	40.95	28.69	0	99.00	99.00	70.06
GT80	6719	82.39	41.58	0	130.00	130.00	50.47
PS=PS SPSTT=REUP							
AFQT44	7033	45.45	29.26	0	99.00	99.00	64.38
GT80	7033	87.22	39.99	0	130.00	130.00	45.85
PS=PS SPSTT=ATTRIT							
AFQT44	4852	45.07	26.42	0	99.00	99.00	58.63
GT80	4852	89.92	34.86	0	130.00	130.00	38.77
PS=PS SPSTT=STILL IN							
AFQT44	1583	42.57	34.50	0	99.00	99.00	81.04
GT80	1583	75.83	50.57	0	130.00	130.00	66.69
PS=PS SPSTT=BAD DATA							
AFQT44	203	45.37	29.93	0	99.00	99.00	65.95
GT80	203	85.35	42.91	0	130.00	130.00	50.27

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

PS	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
NPS	118202	92.4	118202	92.4
PS	9782	7.6	127984	100.0

SPSTT	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
ETS	49578	38.7	49578	38.7
REUP	28510	22.3	78088	61.0
ATTRIT	40994	32.0	119082	93.0
STILL IN	7198	5.6	126280	98.7
BAD DATA	1704	1.3	127984	100.0

TSC44	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
I	3938	3.1	3938	3.1
II	37345	29.2	41283	32.3
IIIA	26578	20.8	67861	53.0
IIIB	35576	27.8	103437	80.8
IV	23676	18.5	127113	99.3
UNKNOWN	871	0.7	127984	100.0

MC44	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
I-IIIA	67861	53.0	67861	53.0
IIIB	35576	27.8	103437	80.8
IV	23676	18.5	127113	99.3
UNKNOWN	871	0.7	127984	100.0

EDLVL	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
COL GRAD	3081	2.4	3081	2.4
HSDG	106594	83.3	109675	85.7
GED	5459	4.3	115134	90.0
NNHSG	12846	10.0	127980	100.0
UNKNOWN	4	0.0	127984	100.0

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

HSGRAD	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
HS GRAD	109675	85.7	109675	85.7
NON HSG	18305	14.3	127980	100.0
UNKNOWN	4	0.0	127984	100.0

RETHGP	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
WHITE	87472	68.3	87472	68.3
BLACK	31334	24.5	118806	92.8
HISAPNIC	5355	4.2	124161	97.0
OTHER	3792	3.0	127953	100.0
UNKNOWN	31	0.0	127984	100.0

SEX	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
UNKNOWN	4	0.0	4	0.0
MALE	112093	87.6	112097	87.6
FEMALE	15887	12.4	127984	100.0

SEVERAL PERTINENT ST...STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	586 0.67 30.19 15.52	1207 1.38 62.18 3.69	105 0.12 5.41 0.52	30 0.03 1.55 0.14	3 0.00 0.15 0.03	10 0.01 0.52 2.25	1941 2.22
HSDG	3047 3.48 4.32 80.69	27168 31.06 38.51 83.07	14654 16.75 20.77 72.58	16079 18.38 22.79 76.71	9298 10.63 13.18 98.95	301 0.34 0.43 67.79	70547 80.65
GED	69 0.08 1.60 1.83	1426 1.63 33.16 4.36	1382 1.58 32.13 6.84	1266 1.45 29.44 6.04	44 0.05 1.02 0.47	114 0.13 2.65 25.68	4301 4.92
NNHSG	74 0.08 0.69 1.96	2902 3.32 27.17 8.87	4049 4.63 37.90 20.05	3587 4.10 33.58 17.11	52 0.06 0.49 0.55	18 0.02 0.17 4.05	10682 12.21
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00 100.00 0.23	1 0.00
TOTAL	3776 4.32	32703 37.39	20190 23.08	20962 23.96	9397 10.74	444 0.51	87472 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	23 0.07 3.03 27.06	293 0.94 38.65 8.91	200 0.64 26.39 4.16	197 0.63 25.99 1.71	42 0.13 5.54 0.37	3 0.01 0.40 0.83	758 2.42
HSDG	62 0.20 0.22 72.94	2693 8.59 9.52 81.90	3949 12.60 13.95 82.17	10099 32.23 35.69 87.57	11184 35.69 39.52 99.31	313 1.00 1.11 86.94	28300 90.32
GED	0 0.00 0.00 0.00	110 0.35 13.75 3.35	228 0.73 28.50 4.74	417 1.33 52.13 3.62	16 0.05 2.00 0.14	29 0.09 3.63 8.06	800 2.55
NNHSG	0 0.00 0.00 0.00	192 0.61 13.01 5.84	429 1.37 29.07 8.93	820 2.62 55.56 7.11	20 0.06 1.36 0.18	15 0.05 1.02 4.17	1476 4.71
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	85 0.27	3288 10.49	4806 15.34	11533 36.81	11262 35.94	360 1.15	31334 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=HISAPNIC

EDLVL   TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	4 0.07 1.59 17.39	54 1.01 21.43 8.67	51 0.95 20.24 5.69	89 1.66 35.32 4.84	54 1.01 21.43 2.80	0 0.00 0.00 0.00	252 4.71
HSDG	18 0.34 0.40 78.26	485 9.06 10.77 77.85	664 12.40 14.74 74.11	1437 26.83 31.90 78.14	1860 34.73 41.30 96.47	40 0.75 0.89 86.96	4504 84.11
GED	1 0.02 0.42 4.35	34 0.63 14.29 5.46	62 1.16 26.05 6.92	129 2.41 54.20 7.01	9 0.17 3.78 0.47	3 0.06 1.26 6.52	238 4.44
NNHSG	0 0.00 0.00 0.00	50 0.93 13.85 8.03	119 2.22 32.96 13.28	184 3.44 50.97 10.01	5 0.09 1.39 0.26	3 0.06 0.83 6.52	361 6.74
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	23 0.43	623 11.63	896 16.73	1839 34.34	1928 36.00	46 0.86	5355 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=OTHER

EDLVL / TSC44 FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	4 0.11 3.13 7.55	51 1.34 39.84 7.04	19 0.50 14.84 2.79	38 1.00 29.69 3.09	15 0.40 11.72 1.38	1 0.03 0.78 5.00	128 3.38
HSDG	48 1.27 1.49 90.57	574 15.14 17.83 79.28	524 13.82 16.27 76.95	1005 26.50 31.21 81.71	1053 27.77 32.70 97.14	16 0.42 0.50 80.00	3220 84.92
GED	1 0.03 0.83 1.89	29 0.76 24.17 4.01	28 0.74 23.33 4.11	51 1.34 42.50 4.15	9 0.24 7.50 0.83	2 0.05 1.67 10.00	120 3.16
NNHSG	0 0.00 0.00 0.00	70 1.85 21.60 9.67	110 2.90 33.95 16.15	136 3.59 41.98 11.06	7 0.18 2.16 0.65	1 0.03 0.31 5.00	324 8.54
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	53 1.40	724 19.09	681 17.96	1230 32.44	1084 28.59	20 0.53	3792 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 3.23 50.00 20.00	0 0.00 0.00 0.00	1 3.23 50.00 20.00	0 0.00 0.00 0.00	2 6.45
HSDG	1 3.23 4.35 100.00	6 19.35 26.09 85.71	3 9.68 13.04 60.00	9 29.03 39.13 75.00	4 12.90 17.39 80.00	0 0.00 0.00 0.00	23 74.19
GED	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
NNHSG	0 0.00 0.00 0.00	1 3.23 33.33 14.29	0 0.00 0.00 0.00	2 6.45 66.67 16.67	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 9.68
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 3.23 33.33 20.00	1 3.23 33.33 8.33	0 0.00 0.00 0.00	1 3.23 33.33 100.00	3 9.68
TOTAL	1 3.23	7 22.58	5 16.13	12 38.71	5 16.13	1 3.23	31 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE OF SPSTT BY TSC44

SPSTT TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	1785 1.39 3.60 45.33	15720 12.28 31.71 42.09	10154 7.93 20.48 38.20	12310 9.62 24.83 34.60	9322 7.28 18.80 39.37	287 0.22 0.58 32.95	49578 38.74
REUP	694 0.54 2.43 17.62	7446 5.82 26.12 19.94	5500 4.30 19.29 20.69	8403 6.57 29.47 23.62	6129 4.79 21.50 25.89	338 0.26 1.19 38.81	28510 22.28
ATTRIT	852 0.67 2.08 21.64	10995 8.59 26.82 29.44	9313 7.28 22.72 35.04	12695 9.92 30.97 35.68	6995 5.47 17.06 29.54	144 0.11 0.35 16.53	40994 32.03
STILL IN	552 0.43 7.67 14.02	2771 2.17 38.50 7.42	1253 0.98 17.41 4.71	1669 1.30 23.19 4.69	874 0.68 12.14 3.69	79 0.06 1.10 9.07	7198 5.62
BAD DATA	55 0.04 3.23 1.40	413 0.32 24.24 1.11	358 0.28 21.01 1.35	499 0.39 29.28 1.40	356 0.28 20.89 1.50	23 0.02 1.35 2.64	1704 1.33
TOTAL	3938 3.08	37345 29.18	26578 20.77	35576 27.80	23676 18.50	871 0.68	127984 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE OF SPSTT BY MC44

SPSTT MC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	27659 21.61 55.79 40.76	12310 9.62 24.83 34.60	9322 7.28 18.80 39.37	287 0.22 0.58 32.95	49578 38.74
REUP	13640 10.66 47.84 20.10	8403 6.57 29.47 23.62	6129 4.79 21.50 25.89	338 0.26 1.19 38.81	28510 22.28
ATTRIT	21160 16.53 51.62 31.18	12695 9.92 30.97 35.68	6995 5.47 17.06 29.54	144 0.11 0.35 16.53	40994 32.03
STILL IN	4576 3.58 63.57 6.74	1669 1.30 23.19 4.69	874 0.68 12.14 3.69	79 0.06 1.10 9.07	7198 5.62
BAD DATA	826 0.65 48.47 1.22	499 0.39 29.28 1.40	356 0.28 20.89 1.50	23 0.02 1.35 2.64	1704 1.33
TOTAL	67861 53.02	35576 27.80	23676 18.50	871 0.68	127984 100.00

SEVERAL PERTINENT ST. TICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE OF SPSTT BY EDLVL

SPSTT EDLVL

FREQUENCY PERCENT ROW PCT COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	1072 0.84 2.16 34.79	43084 33.66 86.90 40.42	1629 1.27 3.29 29.84	3791 2.96 7.65 29.51	2 0.00 0.00 50.00	49578 38.74
REUP	644 0.50 2.26 20.90	25057 19.58 87.89 23.51	1125 0.88 3.95 20.61	1683 1.32 5.90 13.10	1 0.00 0.00 25.00	28510 22.28
ATTRIT	614 0.48 1.50 19.93	31290 24.45 76.33 29.35	2369 1.85 5.78 43.40	6721 5.25 16.40 52.32	0 0.00 0.00 0.00	40994 32.03
STILL IN	714 0.56 9.92 23.17	5786 4.52 80.38 5.43	261 0.20 3.63 4.78	437 0.34 6.07 3.40	0 0.00 0.00 0.00	7198 5.62
BAD DATA	37 0.03 2.17 1.20	1377 1.08 80.81 1.29	75 0.06 4.40 1.37	214 0.17 12.56 1.67	1 0.00 0.06 25.00	1704 1.33
TOTAL	3081 2.41	106594 83.29	5459 4.27	12846 10.04	4 0.00	127984 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE OF SPSTT BY HSGRAD

SPSTT / FREQUENCY / PERCENT / ROW PCT / COL PCT	HSGRAD: HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	44156	5420	2	49578
	34.50	4.23	0.00	38.74
	89.06	10.93	0.00	
	40.26	29.61	50.00	
REUP	25701	2808	1	28510
	20.08	2.19	0.00	22.28
	90.15	9.85	0.00	
	23.43	15.34	25.00	
ATTRIT	31904	9090	0	40994
	24.93	7.10	0.00	32.03
	77.83	22.17	0.00	
	29.09	49.66	0.00	
STILL IN	6500	698	0	7198
	5.08	0.55	0.00	5.62
	90.30	9.70	0.00	
	5.93	3.81	0.00	
BAD DATA	1414	289	1	1704
	1.10	0.23	0.00	1.33
	82.98	16.96	0.06	
	1.29	1.58	25.00	
TOTAL	109675	18305	4	127984
	85.69	14.30	0.00	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE OF SPSTT BY RETHGP

SPSTT RETHGP

FREQUENCY / PERCENT / ROW PCT / COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	35414	10525	2088	1540	11	49578
	27.67	8.22	1.63	1.20	0.01	38.74
	71.43	21.23	4.21	3.11	0.02	
	40.49	33.59	38.99	40.61	35.48	
REUP	15644	10368	1562	931	5	28510
	12.22	8.10	1.22	0.73	0.00	22.28
	54.87	36.37	5.48	3.27	0.02	
	17.88	33.09	29.17	24.55	16.13	
ATTRIT	30273	8336	1307	1069	9	40994
	23.65	6.51	1.02	0.84	0.01	32.03
	73.85	20.33	3.19	2.61	0.02	
	34.61	26.60	24.41	28.19	29.03	
STILL IN	5005	1672	319	199	3	7198
	3.91	1.31	0.25	0.16	0.00	5.62
	69.53	23.23	4.43	2.76	0.04	
	5.72	5.34	5.96	5.25	9.68	
BAD DATA	1136	433	79	53	3	1704
	0.89	0.34	0.06	0.04	0.00	1.33
	66.67	25.41	4.64	3.11	0.18	
	1.30	1.38	1.48	1.40	9.68	
TOTAL	87472	31334	5355	3792	31	127984
	68.35	24.48	4.18	2.96	0.02	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE OF SPSTT BY SEX

SPSTT / SEX FREQUENCY PERCENT ROW PCT COL PCT	UNKNOWN	MALE	FEMALE	TOTAL
ETS	2 0.00 0.00 50.00	44694 34.92 90.15 39.87	4882 3.81 9.85 30.73	49578 38.74
REUP	1 0.00 0.00 25.00	24933 19.48 87.45 22.24	3576 2.79 12.54 22.51	28510 22.28
ATTRIT	0 0.00 0.00 0.00	34580 27.02 84.35 30.85	6414 5.01 15.65 40.37	40994 32.03
STILL IN	0 0.00 0.00 0.00	6415 5.01 89.12 5.72	783 0.61 10.88 4.93	7198 5.62
BAD DATA	1 0.00 0.06 25.00	1471 1.15 86.33 1.31	232 0.18 13.62 1.46	1704 1.33
TOTAL	4 0.00	112093 87.58	15887 12.41	127984 100.00

SEVERAL PERTINENT S1. .STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	203 0.57 30.90 11.83	410 1.16 62.40 2.92	36 0.10 5.48 0.45	5 0.01 0.76 0.07	1 0.00 0.15 0.03	2 0.01 0.30 1.48	657 1.86
HSDG	1467 4.14 4.84 85.49	12347 34.86 40.77 87.87	6364 17.97 21.01 79.72	6201 17.51 20.47 80.86	3820 10.79 12.61 98.99	88 0.25 0.29 65.19	30287 85.52
GED	21 0.06 1.61 1.22	411 1.16 31.54 2.92	407 1.15 31.24 5.10	414 1.17 31.77 5.40	14 0.04 1.07 0.36	36 0.10 2.76 26.67	1303 3.68
NNHSG	25 0.07 0.79 1.46	884 2.50 27.92 6.29	1176 3.32 37.14 14.73	1049 2.96 33.13 13.68	24 0.07 0.76 0.62	8 0.02 0.25 5.93	3166 8.94
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00 100.00 0.74	1 0.00
TOTAL	1716 4.85	14052 39.68	7983 22.54	7669 21.66	3859 10.90	135 0.38	35414 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=BLACK

EDLVL   TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	7 0.07 2.53 22.58	110 1.05 39.71 9.96	72 0.68 25.99 4.64	77 0.73 27.80 2.19	11 0.10 3.97 0.26	0 0.00 0.00 0.00	277 2.63
HSDG	24 0.23 0.25 77.42	923 8.77 9.58 83.61	1319 12.53 13.68 84.99	3108 29.53 32.24 88.25	4155 39.48 43.11 99.31	110 1.05 1.14 83.33	9639 91.58
GED	0 0.00 0.00 0.00	25 0.24 12.25 2.26	54 0.51 26.47 3.48	104 0.99 50.98 2.95	9 0.09 4.41 0.22	12 0.11 5.88 9.09	204 1.94
NNHSG	0 0.00 0.00 0.00	46 0.44 11.36 4.17	107 1.02 26.42 6.89	233 2.21 57.53 6.62	9 0.09 2.22 0.22	10 0.10 2.47 7.58	405 3.85
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	31 0.29	1104 10.49	1552 14.75	3522 33.46	4184 39.75	132 1.25	10525 100.00

SEVERAL PERTINENT ST... STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.10 2.30 25.00	18 0.86 20.69 7.23	21 1.01 24.14 6.25	26 1.25 29.89 3.96	20 0.96 22.99 2.43	0 0.00 0.00 0.00	87 4.17
HSDG	6 0.29 0.33 75.00	207 9.91 11.46 83.13	258 12.36 14.29 76.79	527 25.24 29.18 80.34	796 38.12 44.08 96.60	12 0.57 0.66 80.00	1806 86.49
GED	0 0.00 0.00 0.00	10 0.48 12.50 4.02	16 0.77 20.00 4.76	46 2.20 57.50 7.01	7 0.34 8.75 0.85	1 0.05 1.25 6.67	80 3.83
NNHSG	0 0.00 0.00 0.00	14 0.67 12.17 5.62	41 1.96 35.65 12.20	57 2.73 49.57 8.69	1 0.05 0.87 0.12	2 0.10 1.74 13.33	115 5.51
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	8 0.38	249 11.93	336 16.09	656 31.42	824 39.46	15 0.72	2088 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.13 3.92 6.67	16 1.04 31.37 5.11	12 0.78 23.53 4.30	17 1.10 33.33 3.70	3 0.19 5.88 0.66	1 0.06 1.96 20.00	51 3.31
HSDG	27 1.75 2.01 90.00	268 17.40 19.96 85.62	222 14.42 16.53 79.57	381 24.74 28.37 82.83	442 28.70 32.91 97.57	3 0.19 0.22 60.00	1343 87.21
GED	1 0.06 2.38 3.33	14 0.91 33.33 4.47	11 0.71 26.19 3.94	13 0.84 30.95 2.83	3 0.19 7.14 0.66	0 0.00 0.00 0.00	42 2.73
NNHSG	0 0.00 0.00 0.00	15 0.97 14.42 4.79	34 2.21 32.69 12.19	49 3.18 47.12 10.65	5 0.32 4.81 1.10	1 0.06 0.96 20.00	104 6.75
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	30 1.95	313 20.32	279 18.12	460 29.87	453 29.42	5 0.32	1540 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	.	
HSDG	0	2	3	2	2	0	9
	0.00	18.18	27.27	18.18	18.18	0.00	81.82
	0.00	22.22	33.33	22.22	22.22	0.00	
	.	100.00	75.00	66.67	100.00	.	
GED	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	.	
NNHSG	0	0	0	1	0	0	1
	0.00	0.00	0.00	9.09	0.00	0.00	9.09
	0.00	0.00	0.00	100.00	0.00	0.00	
	.	0.00	0.00	33.33	0.00	.	
UNKNOWN	0	0	1	0	0	0	1
	0.00	0.00	9.09	0.00	0.00	0.00	9.09
	0.00	0.00	100.00	0.00	0.00	0.00	
	.	0.00	25.00	0.00	0.00	.	
TOTAL	0	2	4	3	2	0	11
	0.00	18.18	36.36	27.27	18.18	0.00	100.00

SEVERAL PERTINENT ST...STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 6 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	77 0.49 25.75 11.77	193 1.23 64.55 3.17	18 0.12 6.02 0.51	7 0.04 2.34 0.19	0 0.00 0.00 0.00	4 0.03 1.34 2.38	299 1.91
HSDG	545 3.48 4.11 83.33	5187 33.16 39.14 85.27	2770 17.71 20.90 78.87	3107 19.86 23.45 84.18	1513 9.67 11.42 98.50	130 0.83 0.98 77.38	13252 84.71
GED	16 0.10 1.95 2.45	290 1.85 35.37 4.77	236 1.51 28.78 6.72	232 1.48 28.29 6.29	15 0.10 1.83 0.98	31 0.20 3.78 18.45	820 5.24
NNHSG	16 0.10 1.26 2.45	413 2.64 32.44 6.79	488 3.12 38.33 13.90	345 2.21 27.10 9.35	8 0.05 0.63 0.52	3 0.02 0.24 1.79	1273 8.14
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	654 4.18	6083 38.88	3512 22.45	3691 23.59	1536 9.82	168 1.07	15644 100.00

SEVERAL PERTINENT ST...STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 7 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	8 0.08 3.36 32.00	79 0.76 33.19 7.57	61 0.59 25.63 3.91	72 0.69 30.25 1.86	17 0.16 7.14 0.46	1 0.01 0.42 0.71	238 2.30
HSDG	17 0.16 0.18 68.00	911 8.79 9.44 87.26	1351 13.03 14.00 86.49	3542 34.16 36.69 91.36	3699 35.68 38.32 99.44	133 1.28 1.38 95.00	9653 93.10
GED	0 0.00 0.00 0.00	28 0.27 13.15 2.68	64 0.62 30.05 4.10	115 1.11 53.99 2.97	3 0.03 1.41 0.08	3 0.03 1.41 2.14	213 2.05
NNHSG	0 0.00 0.00 0.00	26 0.25 9.85 2.49	86 0.83 32.58 5.51	148 1.43 56.06 3.82	1 0.01 0.38 0.03	3 0.03 1.14 2.14	264 2.55
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	25 0.24	1044 10.07	1562 15.07	3877 37.39	3720 35.88	140 1.35	10368 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 8 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	15	16	32	18	0	81
	0.00	0.96	1.02	2.05	1.15	0.00	5.19
	0.00	18.52	19.75	39.51	22.22	0.00	
	0.00	8.77	6.08	6.02	3.17	0.00	
HSDG	6	137	198	429	544	21	1335
	0.38	8.77	12.68	27.46	34.83	1.34	85.47
	0.45	10.26	14.83	32.13	40.75	1.57	
	85.71	80.12	75.29	80.64	95.94	95.45	
GED	1	3	21	35	1	1	62
	0.06	0.19	1.34	2.24	0.06	0.06	3.97
	1.61	4.84	33.87	56.45	1.61	1.61	
	14.29	1.75	7.98	6.58	0.18	4.55	
NNHSG	0	16	28	36	4	0	84
	0.00	1.02	1.79	2.30	0.26	0.00	5.38
	0.00	19.05	33.33	42.86	4.76	0.00	
	0.00	9.36	10.65	6.77	0.71	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	7	171	263	532	567	22	1562
	0.45	10.95	16.84	34.06	36.30	1.41	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 9 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=OTHER

EDLVL / TSC44 (FREQUENCY, PERCENT, ROW PCT, COL PCT)	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	8 0.86 30.77 5.41	0 0.00 0.00 0.00	11 1.18 42.31 3.67	7 0.75 26.92 2.30	0 0.00 0.00 0.00	26 2.79
HSDG	7 0.75 0.86 100.00	116 12.46 14.27 78.38	138 14.82 16.97 84.66	248 26.64 30.50 82.67	296 31.79 36.41 97.05	8 0.86 0.98 100.00	813 87.33
GED	0 0.00 0.00 0.00	6 0.64 20.00 4.05	6 0.64 20.00 3.68	16 1.72 53.33 5.33	2 0.21 6.67 0.66	0 0.00 0.00 0.00	30 3.22
NNHSG	0 0.00 0.00 0.00	18 1.93 29.03 12.16	19 2.04 30.65 11.66	25 2.69 40.32 8.33	0 0.00 0.00 0.00	0 0.00 0.00 0.00	62 6.66
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	7 0.75	148 15.90	163 17.51	300 32.22	305 32.76	8 0.86	931 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 10 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	1 20.00 25.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	2 40.00 50.00 66.67	1 20.00 25.00 100.00	0 0.00 0.00 .	4 80.00
GED	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	1 20.00 100.00 33.33	0 0.00 0.00 0.00	0 0.00 0.00 .	1 20.00
TOTAL	1 20.00	0 0.00	0 0.00	3 60.00	1 20.00	0 0.00	5 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 11 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	92	225	34	12	1	0	364
	0.30	0.74	0.11	0.04	0.00	0.00	1.20
	25.27	61.81	9.34	3.30	0.27	0.00	
	11.19	2.29	0.45	0.14	0.03	0.00	
HSDG	674	7503	4677	5872	3513	35	22274
	2.23	24.78	15.45	19.40	11.60	0.12	73.58
	3.03	33.69	21.00	26.36	15.77	0.16	
	82.00	76.46	61.74	69.57	99.07	45.45	
GED	26	639	669	546	13	36	1929
	0.09	2.11	2.21	1.80	0.04	0.12	6.37
	1.35	33.13	34.68	28.30	0.67	1.87	
	3.16	6.51	8.83	6.47	0.37	46.75	
NNHSG	30	1446	2195	2010	19	6	5706
	0.10	4.78	7.25	6.64	0.06	0.02	18.85
	0.53	25.34	38.47	35.23	0.33	0.11	
	3.65	14.74	28.98	23.82	0.54	7.79	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	822	9813	7575	8440	3546	77	30273
	2.72	32.42	25.02	27.88	11.71	0.25	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 12 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3	61	44	40	12	0	160
	0.04	0.73	0.53	0.48	0.14	0.00	1.92
	1.88	38.13	27.50	25.00	7.50	0.00	
	17.65	7.36	3.34	1.19	0.44	0.00	
HSDG	14	611	962	2753	2732	46	7118
	0.17	7.33	11.54	33.03	32.77	0.55	85.39
	0.20	8.58	13.52	38.68	38.38	0.65	
	82.35	73.70	73.10	81.96	99.17	76.67	
GED	0	45	88	168	4	12	317
	0.00	0.54	1.06	2.02	0.05	0.14	3.80
	0.00	14.20	27.76	53.00	1.26	3.79	
	0.00	5.43	6.69	5.00	0.15	20.00	
NNHSG	0	112	222	398	7	2	741
	0.00	1.34	2.66	4.77	0.08	0.02	8.89
	0.00	15.11	29.96	53.71	0.94	0.27	
	0.00	13.51	16.87	11.85	0.25	3.33	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	17	829	1316	3359	2755	60	8336
	0.20	9.94	15.79	40.30	33.05	0.72	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 13 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL	TSC44							
	FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	FREQUENCY	1	13	8	20	13	0	55
	PERCENT	0.08	0.99	0.61	1.53	0.99	0.00	4.21
	ROW PCT	1.82	23.64	14.55	36.36	23.64	0.00	
	COL PCT	25.00	8.67	3.51	3.98	3.10	0.00	
HSDG	FREQUENCY	3	100	159	362	407	1	1032
	PERCENT	0.23	7.65	12.17	27.70	31.14	0.08	78.96
	ROW PCT	0.29	9.69	15.41	35.08	39.44	0.10	
	COL PCT	75.00	66.67	69.74	71.97	96.90	50.00	
GED	FREQUENCY	0	19	22	41	0	1	83
	PERCENT	0.00	1.45	1.68	3.14	0.00	0.08	6.35
	ROW PCT	0.00	22.89	26.51	49.40	0.00	1.20	
	COL PCT	0.00	12.67	9.65	8.15	0.00	50.00	
NNHSG	FREQUENCY	0	18	39	80	0	0	137
	PERCENT	0.00	1.38	2.98	6.12	0.00	0.00	10.48
	ROW PCT	0.00	13.14	28.47	58.39	0.00	0.00	
	COL PCT	0.00	12.00	17.11	15.90	0.00	0.00	
UNKNOWN	FREQUENCY	0	0	0	0	0	0	0
	PERCENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ROW PCT	.	.	.	.	.	.	
	COL PCT	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	FREQUENCY	4	150	228	503	420	2	1307
	PERCENT	0.31	11.48	17.44	38.49	32.13	0.15	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 14 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.09 2.94 11.11	15 1.40 44.12 7.46	5 0.47 14.71 2.59	10 0.94 29.41 2.58	3 0.28 8.82 1.10	0 0.00 0.00 0.00	34 3.18
HSDG	8 0.75 0.93 88.89	146 13.66 17.00 72.64	128 11.97 14.90 66.32	306 28.62 35.62 78.87	267 24.98 31.08 97.80	4 0.37 0.47 80.00	859 80.36
GED	0 0.00 0.00 0.00	7 0.65 17.50 3.48	10 0.94 25.00 5.18	20 1.87 50.00 5.15	2 0.19 5.00 0.73	1 0.09 2.50 20.00	40 3.74
NNHSG	0 0.00 0.00 0.00	33 3.09 24.26 16.42	50 4.68 36.76 25.91	52 4.86 38.24 13.40	1 0.09 0.74 0.37	0 0.00 0.00 0.00	136 12.72
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	9 0.84	201 18.80	193 18.05	388 36.30	273 25.54	5 0.47	1069 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 15 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	0 0.00 0.00 0.00	1 11.11 100.00 100.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 11.11
HSDG	0 0.00 0.00 .	2 22.22 28.57 100.00	0 0.00 0.00 0.00	4 44.44 57.14 80.00	1 11.11 14.29 100.00	0 0.00 0.00 .	7 77.78
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 11.11 100.00 20.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 11.11
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	2 22.22	1 11.11	5 55.56	1 11.11	0 0.00	9 100.00

SEVERAL PERTINENT ST...STICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 16 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	205	369	16	6	1	4	601
	4.10	7.37	0.32	0.12	0.02	0.08	12.01
	34.11	61.40	2.66	1.00	0.17	0.67	
	38.61	15.39	1.89	0.70	0.31	7.41	
HSDG	319	1833	654	681	322	43	3852
	6.37	36.62	13.07	13.61	6.43	0.86	76.96
	8.28	47.59	16.98	17.68	8.36	1.12	
	60.08	76.47	77.30	79.84	99.38	79.63	
GED	5	70	50	56	1	7	189
	0.10	1.40	1.00	1.12	0.02	0.14	3.78
	2.65	37.04	26.46	29.63	0.53	3.70	
	0.94	2.92	5.91	6.57	0.31	12.96	
NNHSG	2	125	126	110	0	0	363
	0.04	2.50	2.52	2.20	0.00	0.00	7.25
	0.55	34.44	34.71	30.30	0.00	0.00	
	0.38	5.21	14.89	12.90	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	531	2397	846	853	324	54	5005
	10.61	47.89	16.90	17.04	6.47	1.08	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 17 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=BLACK

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	5	39	18	5	1	2	70
	0.30	2.33	1.08	0.30	0.06	0.12	4.19
	7.14	55.71	25.71	7.14	1.43	2.86	
	45.45	14.72	5.75	0.79	0.23	10.00	
HSDG	6	212	265	573	432	17	1505
	0.36	12.68	15.85	34.27	25.84	1.02	90.01
	0.40	14.09	17.61	38.07	28.70	1.13	
	54.55	80.00	84.66	91.10	99.54	85.00	
GED	0	9	20	26	0	1	56
	0.00	0.54	1.20	1.56	0.00	0.06	3.35
	0.00	16.07	35.71	46.43	0.00	1.79	
	0.00	3.40	6.39	4.13	0.00	5.00	
NNHSG	0	5	10	25	1	0	41
	0.00	0.30	0.60	1.50	0.06	0.00	2.45
	0.00	12.20	24.39	60.98	2.44	0.00	
	0.00	1.89	3.19	3.97	0.23	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	11	265	313	629	434	20	1672
	0.66	15.85	18.72	37.62	25.96	1.20	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 18 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	8	5	10	3	0	27
	0.31	2.51	1.57	3.13	0.94	0.00	8.46
	3.70	29.63	18.52	37.04	11.11	0.00	
	33.33	16.67	8.62	8.20	3.57	0.00	
HSDG	2	37	43	100	81	4	267
	0.63	11.60	13.48	31.35	25.39	1.25	83.70
	0.75	13.86	16.10	37.45	30.34	1.50	
	66.67	77.08	74.14	81.97	96.43	100.00	
GED	0	1	2	7	0	0	10
	0.00	0.31	0.63	2.19	0.00	0.00	3.13
	0.00	10.00	20.00	70.00	0.00	0.00	
	0.00	2.08	3.45	5.74	0.00	0.00	
NNHSG	0	2	8	5	0	0	15
	0.00	0.63	2.51	1.57	0.00	0.00	4.70
	0.00	13.33	53.33	33.33	0.00	0.00	
	0.00	4.17	13.79	4.10	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	3	48	58	122	84	4	319
	0.94	15.05	18.18	38.24	26.33	1.25	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 19 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	12	2	0	1	0	16
	0.50	6.03	1.01	0.00	0.50	0.00	8.04
	6.25	75.00	12.50	0.00	6.25	0.00	
	14.29	20.34	5.56	0.00	3.13	0.00	
HSDG	6	42	29	54	29	0	160
	3.02	21.11	14.57	27.14	14.57	0.00	80.40
	3.75	26.25	18.13	33.75	18.13	0.00	
	85.71	71.19	80.56	84.38	90.63	0.00	
GED	0	2	0	2	1	1	6
	0.00	1.01	0.00	1.01	0.50	0.50	3.02
	0.00	33.33	0.00	33.33	16.67	16.67	
	0.00	3.39	0.00	3.13	3.13	100.00	
NNHSG	0	3	5	8	1	0	17
	0.00	1.51	2.51	4.02	0.50	0.00	8.54
	0.00	17.65	29.41	47.06	5.88	0.00	
	0.00	5.08	13.89	12.50	3.13	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	7	59	36	64	32	1	199
	3.52	29.65	18.09	32.16	16.08	0.50	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 20 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 33.33 50.00 50.00	0 0.00 0.00 .	1 33.33 50.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	2 66.67
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 0.00 .	1 33.33 100.00 50.00	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	1 33.33
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	2 66.67	0 0.00	1 33.33	0 0.00	0 0.00	3 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 21 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	9	10	1	0	0	0	20
	0.79	0.88	0.09	0.00	0.00	0.00	1.76
	45.00	50.00	5.00	0.00	0.00	0.00	
	16.98	2.79	0.36	0.00	0.00	0.00	
HSDG	42	298	189	218	130	5	882
	3.70	26.23	16.64	19.19	11.44	0.44	77.64
	4.76	33.79	21.43	24.72	14.74	0.57	
	79.25	83.24	68.98	70.55	98.48	50.00	
GED	1	16	20	18	1	4	60
	0.09	1.41	1.76	1.58	0.09	0.35	5.28
	1.67	26.67	33.33	30.00	1.67	6.67	
	1.89	4.47	7.30	5.83	0.76	40.00	
NNHSG	1	34	64	73	1	1	174
	0.09	2.99	5.63	6.43	0.09	0.09	15.32
	0.57	19.54	36.78	41.95	0.57	0.57	
	1.89	9.50	23.36	23.62	0.76	10.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	53	358	274	309	132	10	1136
	4.67	31.51	24.12	27.20	11.62	0.88	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 22 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=BLACK

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	4	5	3	1	0	13
	0.00	0.92	1.15	0.69	0.23	0.00	3.00
	0.00	30.77	38.46	23.08	7.69	0.00	
	0.00	8.70	7.94	2.05	0.59	0.00	
HSDG	1	36	52	123	166	7	385
	0.23	8.31	12.01	28.41	38.34	1.62	88.91
	0.26	9.35	13.51	31.95	43.12	1.82	
	100.00	78.26	82.54	84.25	98.22	87.50	
GED	0	3	2	4	0	1	10
	0.00	0.69	0.46	0.92	0.00	0.23	2.31
	0.00	30.00	20.00	40.00	0.00	10.00	
	0.00	6.52	3.17	2.74	0.00	12.50	
NNHSG	0	3	4	16	2	0	25
	0.00	0.69	0.92	3.70	0.46	0.00	5.77
	0.00	12.00	16.00	64.00	8.00	0.00	
	0.00	6.52	6.35	10.96	1.18	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	1	46	63	146	169	8	433
	0.23	10.62	14.55	33.72	39.03	1.85	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 23 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	0	1	1	0	0	2
	0.00	0.00	1.27	1.27	0.00	0.00	2.53
	0.00	0.00	50.00	50.00	0.00	0.00	
	0.00	0.00	9.09	3.85	0.00	0.00	
HSDG	1	4	6	19	32	2	64
	1.27	5.06	7.59	24.05	40.51	2.53	81.01
	1.56	6.25	9.38	29.69	50.00	3.13	
	100.00	80.00	54.55	73.08	96.97	66.67	
GED	0	1	1	0	1	0	3
	0.00	1.27	1.27	0.00	1.27	0.00	3.80
	0.00	33.33	33.33	0.00	33.33	0.00	
	0.00	20.00	9.09	0.00	3.03	0.00	
NNHSG	0	0	3	6	0	1	10
	0.00	0.00	3.80	7.59	0.00	1.27	12.66
	0.00	0.00	30.00	60.00	0.00	10.00	
	0.00	0.00	27.27	23.08	0.00	33.33	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	1	5	11	26	33	3	79
	1.27	6.33	13.92	32.91	41.77	3.80	100.00

SEVERAL PERTINENT STA TICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 24 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.89 100.00 4.76	0 0.00 0.00 0.00	1 1.89
HSDG	0 0.00 0.00 .	2 3.77 4.44 66.67	7 13.21 15.56 70.00	16 30.19 35.56 88.89	19 35.85 42.22 90.48	1 1.89 2.22 100.00	45 84.91
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	1 1.89 50.00 10.00	0 0.00 0.00 0.00	1 1.89 50.00 4.76	0 0.00 0.00 0.00	2 3.77
NNHSG	0 0.00 0.00 .	1 1.89 20.00 33.33	2 3.77 40.00 20.00	2 3.77 40.00 11.11	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 9.43
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	3 5.66	10 18.87	18 33.96	21 39.62	1 1.89	53 100.00

SEVERAL PERTINENT STA. .TICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 25 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	1 33.33 100.00 100.00	0 0.00 0.00 0.00	1 33.33
HSDG	0 0.00 0.00 .	1 33.33 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 33.33
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 0.00	1 33.33 100.00 100.00	1 33.33
TOTAL	0 0.00	1 33.33	0 0.00	0 0.00	1 33.33	1 33.33	3 100.00

SEVERAL PERTINENT STA[illegible]ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 1 OF SPSTT BY TSC44
CONTROLLING FOR PS=NPS

SPSTT TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	1687 1.43 3.62 48.01	14903 12.61 31.97 43.40	9622 8.14 20.64 38.77	11380 9.63 24.41 34.89	9019 7.63 19.35 39.37	2 0.00 0.00 28.57	46613 39.44
REUP	540 0.46 2.16 15.37	6374 5.39 25.44 18.56	4869 4.12 19.43 19.62	7408 6.27 29.56 22.71	5865 4.96 23.41 25.60	2 0.00 0.01 28.57	25058 21.20
ATTRIT	784 0.66 2.03 22.31	10312 8.72 26.65 30.03	8873 7.51 22.93 35.75	11893 10.06 30.73 36.46	6835 5.78 17.66 29.84	0 0.00 0.00 0.00	38697 32.74
STILL IN	457 0.39 7.29 13.01	2372 2.01 37.82 6.91	1120 0.95 17.86 4.51	1469 1.24 23.43 4.50	851 0.72 13.57 3.71	2 0.00 0.03 28.57	6271 5.31
BAD DATA	46 0.04 2.94 1.31	375 0.32 23.99 1.09	334 0.28 21.37 1.35	469 0.40 30.01 1.44	338 0.29 21.63 1.48	1 0.00 0.06 14.29	1563 1.32
TOTAL	3514 2.97	34336 29.05	24818 21.00	32619 27.60	22908 19.38	7 0.01	118202 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 2 OF SPSTT BY TSC44
CONTROLLING FOR PS=PS

SPSTT TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	98 1.00 3.31 23.11	817 8.35 27.55 27.15	532 5.44 17.94 30.23	930 9.51 31.37 31.45	303 3.10 10.22 39.45	285 2.91 9.61 32.99	2965 30.31
REUP	154 1.57 4.46 36.32	1072 10.96 31.05 35.63	631 6.45 18.28 35.85	995 10.17 28.82 33.65	264 2.70 7.65 34.38	336 3.43 9.73 38.89	3452 35.29
ATTRIT	68 0.70 2.96 16.04	683 6.98 29.73 22.70	440 4.50 19.16 25.00	802 8.20 34.92 27.12	160 1.64 6.97 20.83	144 1.47 6.27 16.67	2297 23.48
STILL IN	95 0.97 10.25 22.41	399 4.08 43.04 13.26	133 1.36 14.35 7.56	200 2.04 21.57 6.76	23 0.24 2.48 2.99	77 0.79 8.31 8.91	927 9.48
BAD DATA	9 0.09 6.38 2.12	38 0.39 26.95 1.26	24 0.25 17.02 1.36	30 0.31 21.28 1.01	18 0.18 12.77 2.34	22 0.22 15.60 2.55	141 1.44
TOTAL	424 4.33	3009 30.76	1760 17.99	2957 30.23	768 7.85	864 8.83	9782 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 1 OF SPSTT BY MC44
CONTROLLING FOR PS=NPS

SPSTT MC44

FREQUENCY PERCENT ROW PCT COL PCT	I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	26212 22.18 56.23 41.83	11380 9.63 24.41 34.89	9019 7.63 19.35 39.37	2 0.00 0.00 28.57	46613 39.44
REUP	11783 9.97 47.02 18.80	7408 6.27 29.56 22.71	5865 4.96 23.41 25.60	2 0.00 0.01 28.57	25058 21.20
ATTRIT	19969 16.89 51.60 31.86	11893 10.06 30.73 36.46	6835 5.78 17.66 29.84	0 0.00 0.00 0.00	38697 32.74
STILL IN	3949 3.34 62.97 6.30	1469 1.24 23.43 4.50	851 0.72 13.57 3.71	2 0.00 0.03 28.57	6271 5.31
BAD DATA	755 0.64 48.30 1.20	469 0.40 30.01 1.44	338 0.29 21.63 1.48	1 0.00 0.06 14.29	1563 1.32
TOTAL	62668 53.02	32619 27.60	22908 19.38	7 0.01	118202 100.00

SEVERAL PERTINENT STA ..TICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 2 OF SPSTT BY MC44
CONTROLLING FOR PS=PS

SPSTT MC44

FREQUENCY PERCENT ROW PCT COL PCT	I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	1447 14.79 48.80 27.86	930 9.51 31.37 31.45	303 3.10 10.22 39.45	285 2.91 9.61 32.99	2965 30.31
REUP	1857 18.98 53.79 35.76	995 10.17 28.82 33.65	264 2.70 7.65 34.38	336 3.43 9.73 38.89	3452 35.29
ATTRIT	1191 12.18 51.85 22.93	802 8.20 34.92 27.12	160 1.64 6.97 20.83	144 1.47 6.27 16.67	2297 23.48
STILL IN	627 6.41 67.64 12.07	200 2.04 21.57 6.76	23 0.24 2.48 2.99	77 0.79 8.31 8.91	927 9.48
BAD DATA	71 0.73 50.35 1.37	30 0.31 21.28 1.01	18 0.18 12.77 2.34	22 0.22 15.60 2.55	141 1.44
TOTAL	5193 53.09	2957 30.23	768 7.85	864 8.83	9782 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 1 OF SPSTT BY EDLVL
CONTROLLING FOR PS=NPS

SPSTT / EDLVL FREQUENCY PERCENT ROW PCT COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	996 0.84 2.14 36.98	40978 34.67 87.91 41.12	913 0.77 1.96 28.97	3726 3.15 7.99 29.33	0 0.00 0.00 .	46613 39.44
REUP	533 0.45 2.13 19.79	22392 18.94 89.36 22.47	482 0.41 1.92 15.29	1651 1.40 6.59 12.99	0 0.00 0.00 .	25058 21.20
ATTRIT	561 0.47 1.45 20.83	29860 25.26 77.16 29.96	1593 1.35 4.12 50.54	6683 5.65 17.27 52.60	0 0.00 0.00 .	38697 32.74
STILL IN	574 0.49 9.15 21.31	5141 4.35 81.98 5.16	121 0.10 1.93 3.84	435 0.37 6.94 3.42	0 0.00 0.00 .	6271 5.31
BAD DATA	29 0.02 1.86 1.08	1281 1.08 81.96 1.29	43 0.04 2.75 1.36	210 0.18 13.44 1.65	0 0.00 0.00 .	1563 1.32
TOTAL	2693 2.28	99652 84.31	3152 2.67	12705 10.75	0 0.00	118202 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 2 OF SPSTT BY EDLVL
CONTROLLING FOR PS=PS

SPSTT EDLVL

FREQUENCY PERCENT ROW PCT COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	76 0.78 2.56 19.59	2106 21.53 71.03 30.34	716 7.32 24.15 31.04	65 0.66 2.19 46.10	2 0.02 0.07 50.00	2965 30.31
REUP	111 1.13 3.22 28.61	2665 27.24 77.20 38.39	643 6.57 18.63 27.87	32 0.33 0.93 22.70	1 0.01 0.03 25.00	3452 35.29
ATTRIT	53 0.54 2.31 13.66	1430 14.62 62.26 20.60	776 7.93 33.78 33.64	38 0.39 1.65 26.95	0 0.00 0.00 0.00	2297 23.48
STILL IN	140 1.43 15.10 36.08	645 6.59 69.58 9.29	140 1.43 15.10 6.07	2 0.02 0.22 1.42	0 0.00 0.00 0.00	927 9.48
BAD DATA	8 0.08 5.67 2.06	96 0.98 68.09 1.38	32 0.33 22.70 1.39	4 0.04 2.84 2.84	1 0.01 0.71 25.00	141 1.44
TOTAL	388 3.97	6942 70.97	2307 23.58	141 1.44	4 0.04	9782 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 1 OF SPSTT BY HSGRAD
CONTROLLING FOR PS=NPS

SPSTT HSGRAD

FREQUENCY PERCENT ROW PCT COL PCT	HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	41974 35.51 90.05 41.01	4639 3.92 9.95 29.26	0 0.00 0.00 .	46613 39.44
REUP	22925 19.39 91.49 22.40	2133 1.80 8.51 13.45	0 0.00 0.00 .	25058 21.20
ATTRIT	30421 25.74 78.61 29.72	8276 7.00 21.39 52.19	0 0.00 0.00 .	38697 32.74
STILL IN	5715 4.83 91.13 5.58	556 0.47 8.87 3.51	0 0.00 0.00 .	6271 5.31
BAD DATA	1310 1.11 83.81 1.28	253 0.21 16.19 1.60	0 0.00 0.00 .	1563 1.32
TOTAL	102345 86.58	15857 13.42	0 0.00	118202 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 2 OF SPSTT BY HSGRAD
CONTROLLING FOR PS=PS

SPSTT HSGRAD

FREQUENCY / PERCENT / ROW PCT / COL PCT	HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	2182	781	2	2965
	22.31	7.98	0.02	30.31
	73.59	26.34	0.07	
	29.77	31.90	50.00	
REUP	2776	675	1	3452
	28.38	6.90	0.01	35.29
	80.42	19.55	0.03	
	37.87	27.57	25.00	
ATTRIT	1483	814	0	2297
	15.16	8.32	0.00	23.48
	64.56	35.44	0.00	
	20.23	33.25	0.00	
STILL IN	785	142	0	927
	8.02	1.45	0.00	9.48
	84.68	15.32	0.00	
	10.71	5.80	0.00	
BAD DATA	104	36	1	141
	1.06	0.37	0.01	1.44
	73.76	25.53	0.71	
	1.42	1.47	25.00	
TOTAL	7330	2448	4	9782
	74.93	25.03	0.04	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 1 OF SPSTT BY RETHGP
CONTROLLING FOR PS=NPS

SPSTT RETHGP

FREQUENCY / PERCENT / ROW PCT / COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	33441	9786	1925	1451	10	46613
	28.29	8.28	1.63	1.23	0.01	39.44
	71.74	20.99	4.13	3.11	0.02	
	41.39	33.74	39.77	40.95	35.71	
REUP	13405	9451	1346	852	4	25058
	11.34	8.00	1.14	0.72	0.00	21.20
	53.50	37.72	5.37	3.40	0.02	
	16.59	32.59	27.81	24.05	14.29	
ATTRIT	28572	7885	1215	1016	9	38697
	24.17	6.67	1.03	0.86	0.01	32.74
	73.84	20.38	3.14	2.63	0.02	
	35.37	27.19	25.10	28.68	32.14	
STILL IN	4328	1481	282	177	3	6271
	3.66	1.25	0.24	0.15	0.00	5.31
	69.02	23.62	4.50	2.82	0.05	
	5.36	5.11	5.83	5.00	10.71	
BAD DATA	1042	400	72	47	2	1563
	0.88	0.34	0.06	0.04	0.00	1.32
	66.67	25.59	4.61	3.01	0.13	
	1.29	1.38	1.49	1.33	7.14	
TOTAL	80788	29003	4840	3543	28	118202
	68.35	24.54	4.09	3.00	0.02	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 2 OF SPSTT BY RETHGP
CONTROLLING FOR PS=PS

SPSTT RETHGP

FREQUENCY / PERCENT / ROW PCT / COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	1973 20.17 66.54 29.52	739 7.55 24.92 31.70	163 1.67 5.50 31.65	89 0.91 3.00 35.74	1 0.01 0.03 33.33	2965 30.31
REUP	2239 22.89 64.86 33.50	917 9.37 26.56 39.34	216 2.21 6.26 41.94	79 0.81 2.29 31.73	1 0.01 0.03 33.33	3452 35.29
ATTRIT	1701 17.39 74.05 25.45	451 4.61 19.63 19.35	92 0.94 4.01 17.86	53 0.54 2.31 21.29	0 0.00 0.00 0.00	2297 23.48
STILL IN	677 6.92 73.03 10.13	191 1.95 20.60 8.19	37 0.38 3.99 7.18	22 0.22 2.37 8.84	0 0.00 0.00 0.00	927 9.48
BAD DATA	94 0.96 66.67 1.41	33 0.34 23.40 1.42	7 0.07 4.96 1.36	6 0.06 4.26 2.41	1 0.01 0.71 33.33	141 1.44
TOTAL	6684 68.33	2331 23.83	515 5.26	249 2.55	3 0.03	9782 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 1 OF SPSTT BY SEX
CONTROLLING FOR PS=NPS

SPSTT SEX

FREQUENCY PERCENT ROW PCT COL PCT	UNKNOWN	MALE	FEMALE	TOTAL
ETS	1 0.00 0.00 100.00	42030 35.56 90.17 40.67	4582 3.88 9.83 30.86	46613 39.44
REUP	0 0.00 0.00 0.00	21804 18.45 87.01 21.10	3254 2.75 12.99 21.91	25058 21.20
ATTRIT	0 0.00 0.00 0.00	32596 27.58 84.23 31.54	6101 5.16 15.77 41.08	38697 32.74
STILL IN	0 0.00 0.00 0.00	5576 4.72 88.92 5.40	695 0.59 11.08 4.68	6271 5.31
BAD DATA	0 0.00 0.00 0.00	1345 1.14 86.05 1.30	218 0.18 13.95 1.47	1563 1.32
TOTAL	1 0.00	103351 87.44	14850 12.56	118202 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 2 OF SPSTT BY SEX
CONTROLLING FOR PS=PS

SPSTT / FREQUENCY / PERCENT / ROW PCT / COL PCT	SEX: UNKNOWN	MALE	FEMALE	TOTAL
ETS	1 0.01 0.03 33.33	2664 27.23 89.85 30.47	300 3.07 10.12 28.93	2965 30.31
REUP	1 0.01 0.03 33.33	3129 31.99 90.64 35.79	322 3.29 9.33 31.05	3452 35.29
ATTRIT	0 0.00 0.00 0.00	1984 20.28 86.37 22.70	313 3.20 13.63 30.18	2297 23.48
STILL IN	0 0.00 0.00 0.00	839 8.58 90.51 9.60	88 0.90 9.49 8.49	927 9.48
BAD DATA	1 0.01 0.71 33.33	126 1.29 89.36 1.44	14 0.14 9.93 1.35	141 1.44
TOTAL	3 0.03	8742 89.37	1037 10.60	9782 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	189	374	34	5	0	0	602
	0.57	1.12	0.10	0.01	0.00	0.00	1.80
	31.40	62.13	5.65	0.83	0.00	0.00	
	11.67	2.80	0.45	0.07	0.00	.	
HSDG	1392	11792	6105	5930	3740	0	28959
	4.16	35.26	18.26	17.73	11.18	0.00	86.60
	4.81	40.72	21.08	20.48	12.91	0.00	
	85.93	88.37	80.35	83.17	99.76	.	
GED	14	295	288	158	0	0	755
	0.04	0.88	0.86	0.47	0.00	0.00	2.26
	1.85	39.07	38.15	20.93	0.00	0.00	
	0.86	2.21	3.79	2.22	0.00	.	
NNHSG	25	883	1171	1037	9	0	3125
	0.07	2.64	3.50	3.10	0.03	0.00	9.34
	0.80	28.26	37.47	33.18	0.29	0.00	
	1.54	6.62	15.41	14.54	0.24	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	1620	13344	7598	7130	3749	0	33441
	4.84	39.90	22.72	21.32	11.21	0.00	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	7	104	71	73	11	0	266
	0.07	1.06	0.73	0.75	0.11	0.00	2.72
	2.63	39.10	26.69	27.44	4.14	0.00	
	23.33	10.13	4.90	2.26	0.27	0.00	
HSDG	23	858	1241	2889	4028	0	9039
	0.24	8.77	12.68	29.52	41.16	0.00	92.37
	0.25	9.49	13.73	31.96	44.56	0.00	
	76.67	83.54	85.59	89.30	99.63	0.00	
GED	0	19	32	43	1	0	95
	0.00	0.19	0.33	0.44	0.01	0.00	0.97
	0.00	20.00	33.68	45.26	1.05	0.00	
	0.00	1.85	2.21	1.33	0.02	0.00	
NNHSG	0	46	106	230	3	1	386
	0.00	0.47	1.08	2.35	0.03	0.01	3.94
	0.00	11.92	27.46	59.59	0.78	0.26	
	0.00	4.48	7.31	7.11	0.07	100.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	30	1027	1450	3235	4043	1	9786
	0.31	10.49	14.82	33.06	41.31	0.01	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2	17	19	23	20	0	81
	0.10	0.88	0.99	1.19	1.04	0.00	4.21
	2.47	20.99	23.46	28.40	24.69	0.00	
	25.00	7.17	6.17	3.95	2.54	0.00	
HSDG	6	197	241	479	767	1	1691
	0.31	10.23	12.52	24.88	39.84	0.05	87.84
	0.35	11.65	14.25	28.33	45.36	0.06	
	75.00	83.12	78.25	82.16	97.34	100.00	
GED	0	9	7	25	0	0	41
	0.00	0.47	0.36	1.30	0.00	0.00	2.13
	0.00	21.95	17.07	60.98	0.00	0.00	
	0.00	3.80	2.27	4.29	0.00	0.00	
NNHSG	0	14	41	56	1	0	112
	0.00	0.73	2.13	2.91	0.05	0.00	5.82
	0.00	12.50	36.61	50.00	0.89	0.00	
	0.00	5.91	13.31	9.61	0.13	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	8	237	308	583	788	1	1925
	0.42	12.31	16.00	30.29	40.94	0.05	100.00

SEVERAL PERTINENT STA ,ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2	15	12	15	3	0	47
	0.14	1.03	0.83	1.03	0.21	0.00	3.24
	4.26	31.91	25.53	31.91	6.38	0.00	
	6.90	5.12	4.56	3.50	0.69	.	
HSDG	27	254	208	361	430	0	1280
	1.86	17.51	14.33	24.88	29.63	0.00	88.22
	2.11	19.84	16.25	28.20	33.59	0.00	
	93.10	86.69	79.09	84.15	98.40	.	
GED	0	9	9	4	0	0	22
	0.00	0.62	0.62	0.28	0.00	0.00	1.52
	0.00	40.91	40.91	18.18	0.00	0.00	
	0.00	3.07	3.42	0.93	0.00	.	
NNHSG	0	15	34	49	4	0	102
	0.00	1.03	2.34	3.38	0.28	0.00	7.03
	0.00	14.71	33.33	48.04	3.92	0.00	
	0.00	5.12	12.93	11.42	0.92	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	29	293	263	429	437	0	1451
	2.00	20.19	18.13	29.57	30.12	0.00	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	2 20.00 22.22 100.00	3 30.00 33.33 100.00	2 20.00 22.22 66.67	2 20.00 22.22 100.00	0 0.00 0.00 .	9 90.00
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 10.00 100.00 33.33	0 0.00 0.00 0.00	0 0.00 0.00 .	1 10.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	2 20.00	3 30.00	3 30.00	2 20.00	0 0.00	10 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 6 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	53	149	15	7	0	0	224
	0.40	1.11	0.11	0.05	0.00	0.00	1.67
	23.66	66.52	6.70	3.13	0.00	0.00	
	10.47	2.89	0.48	0.22	0.00	.	
HSDG	429	4437	2471	2796	1448	0	11581
	3.20	33.10	18.43	20.86	10.80	0.00	86.39
	3.70	38.31	21.34	24.14	12.50	0.00	
	84.78	86.02	79.86	87.43	99.93	.	
GED	8	160	121	56	0	0	345
	0.06	1.19	0.90	0.42	0.00	0.00	2.57
	2.32	46.38	35.07	16.23	0.00	0.00	
	1.58	3.10	3.91	1.75	0.00	.	
NNHSG	16	412	487	339	1	0	1255
	0.12	3.07	3.63	2.53	0.01	0.00	9.36
	1.27	32.83	38.80	27.01	0.08	0.00	
	3.16	7.99	15.74	10.60	0.07	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	506	5158	3094	3198	1449	0	13405
	3.77	38.48	23.08	23.86	10.81	0.00	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 7 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	8	71	59	62	15	0	215
	0.08	0.75	0.62	0.66	0.16	0.00	2.27
	3.72	33.02	27.44	28.84	6.98	0.00	
	34.78	7.57	4.21	1.77	0.42	0.00	
HSDG	15	824	1222	3249	3571	2	8883
	0.16	8.72	12.93	34.38	37.78	0.02	93.99
	0.17	9.28	13.76	36.58	40.20	0.02	
	65.22	87.85	87.16	92.86	99.55	100.00	
GED	0	17	36	43	1	0	97
	0.00	0.18	0.38	0.45	0.01	0.00	1.03
	0.00	17.53	37.11	44.33	1.03	0.00	
	0.00	1.81	2.57	1.23	0.03	0.00	
NNHSG	0	26	85	145	0	0	256
	0.00	0.28	0.90	1.53	0.00	0.00	2.71
	0.00	10.16	33.20	56.64	0.00	0.00	
	0.00	2.77	6.06	4.14	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	23	938	1402	3499	3587	2	9451
	0.24	9.92	14.83	37.02	37.95	0.02	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 8 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	14	14	26	16	0	70
	0.00	1.04	1.04	1.93	1.19	0.00	5.20
	0.00	20.00	20.00	37.14	22.86	0.00	
	0.00	9.86	6.28	5.87	2.99	.	
HSDG	3	111	170	371	518	0	1173
	0.22	8.25	12.63	27.56	38.48	0.00	87.15
	0.26	9.46	14.49	31.63	44.16	0.00	
	100.00	78.17	76.23	83.75	96.82	.	
GED	0	1	11	11	0	0	23
	0.00	0.07	0.82	0.82	0.00	0.00	1.71
	0.00	4.35	47.83	47.83	0.00	0.00	
	0.00	0.70	4.93	2.48	0.00	.	
NNHSG	0	16	28	35	1	0	80
	0.00	1.19	2.08	2.60	0.07	0.00	5.94
	0.00	20.00	35.00	43.75	1.25	0.00	
	0.00	11.27	12.56	7.90	0.19	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	3	142	223	443	535	0	1346
	0.22	10.55	16.57	32.91	39.75	0.00	100.00

SEVERAL PERTINENT STA ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 9 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	7 0.82 29.17 5.15	0 0.00 0.00 0.00	10 1.17 41.67 3.76	7 0.82 29.17 2.39	0 0.00 0.00 .	24 2.82
HSDG	7 0.82 0.93 100.00	105 12.32 13.98 77.21	127 14.91 16.91 84.67	227 26.64 30.23 85.34	285 33.45 37.95 97.27	0 0.00 0.00 .	751 88.15
GED	0 0.00 0.00 0.00	6 0.70 35.29 4.41	5 0.59 29.41 3.33	5 0.59 29.41 1.88	1 0.12 5.88 0.34	0 0.00 0.00 .	17 2.00
NNHSG	0 0.00 0.00 0.00	18 2.11 30.00 13.24	18 2.11 30.00 12.00	24 2.82 40.00 9.02	0 0.00 0.00 0.00	0 0.00 0.00 .	60 7.04
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	7 0.82	136 15.96	150 17.61	266 31.22	293 34.39	0 0.00	852 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 10 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	1 25.00 25.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	2 50.00 50.00 100.00	1 25.00 25.00 100.00	0 0.00 0.00 .	4 100.00
GED	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	1 25.00	0 0.00	0 0.00	2 50.00	1 25.00	0 0.00	4 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 11 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	79	204	31	11	1	0	326
	0.28	0.71	0.11	0.04	0.00	0.00	1.14
	24.23	62.58	9.51	3.37	0.31	0.00	
	10.45	2.22	0.43	0.14	0.03	.	
HSDG	625	7067	4476	5632	3448	0	21248
	2.19	24.73	15.67	19.71	12.07	0.00	74.37
	2.94	33.26	21.07	26.51	16.23	0.00	
	82.67	76.75	61.88	71.17	99.60	.	
GED	22	494	537	265	2	0	1320
	0.08	1.73	1.88	0.93	0.01	0.00	4.62
	1.67	37.42	40.68	20.08	0.15	0.00	
	2.91	5.36	7.42	3.35	0.06	.	
NNHSG	30	1443	2189	2005	11	0	5678
	0.10	5.05	7.66	7.02	0.04	0.00	19.87
	0.53	25.41	38.55	35.31	0.19	0.00	
	3.97	15.67	30.26	25.34	0.32	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	756	9208	7233	7913	3462	0	28572
	2.65	32.23	25.31	27.69	12.12	0.00	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 12 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.03 1.33 13.33	55 0.70 36.67 7.09	42 0.53 28.00 3.39	39 0.49 26.00 1.23	12 0.15 8.00 0.45	0 0.00 0.00 .	150 1.90
HSDG	13 0.16 0.19 86.67	572 7.25 8.40 73.71	908 11.52 13.33 73.23	2636 33.43 38.71 83.47	2681 34.00 39.37 99.44	0 0.00 0.00 .	6810 86.37
GED	0 0.00 0.00 0.00	37 0.47 19.07 4.77	68 0.86 35.05 5.48	88 1.12 45.36 2.79	1 0.01 0.52 0.04	0 0.00 0.00 .	194 2.46
NNHSG	0 0.00 0.00 0.00	112 1.42 15.32 14.43	222 2.82 30.37 17.90	395 5.01 54.04 12.51	2 0.03 0.27 0.07	0 0.00 0.00 .	731 9.27
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	15 0.19	776 9.84	1240 15.73	3158 40.05	2696 34.19	0 0.00	7885 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 13 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	10	7	20	13	0	51
	0.08	0.82	0.58	1.65	1.07	0.00	4.20
	1.96	19.61	13.73	39.22	25.49	0.00	
	25.00	7.30	3.27	4.43	3.18	.	
HSDG	3	91	150	335	396	0	975
	0.25	7.49	12.35	27.57	32.59	0.00	80.25
	0.31	9.33	15.38	34.36	40.62	0.00	
	75.00	66.42	70.09	74.28	96.82	.	
GED	0	18	18	16	0	0	52
	0.00	1.48	1.48	1.32	0.00	0.00	4.28
	0.00	34.62	34.62	30.77	0.00	0.00	
	0.00	13.14	8.41	3.55	0.00	.	
NNHSG	0	18	39	80	0	0	137
	0.00	1.48	3.21	6.58	0.00	0.00	11.28
	0.00	13.14	28.47	58.39	0.00	0.00	
	0.00	13.14	18.22	17.74	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	4	137	214	451	409	0	1215
	0.33	11.28	17.61	37.12	33.66	0.00	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 14 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.10 3.03 11.11	14 1.38 42.42 7.41	5 0.49 15.15 2.70	10 0.98 30.30 2.73	3 0.30 9.09 1.12	0 0.00 0.00 .	33 3.25
HSDG	8 0.79 0.98 88.89	135 13.29 16.46 71.43	121 11.91 14.76 65.41	293 28.84 35.73 80.05	263 25.89 32.07 98.50	0 0.00 0.00 .	820 80.71
GED	0 0.00 0.00 0.00	7 0.69 25.93 3.70	9 0.89 33.33 4.86	11 1.08 40.74 3.01	0 0.00 0.00 0.00	0 0.00 0.00 .	27 2.66
NNHSG	0 0.00 0.00 0.00	33 3.25 24.26 17.46	50 4.92 36.76 27.03	52 5.12 38.24 14.21	1 0.10 0.74 0.37	0 0.00 0.00 .	136 13.39
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	9 0.89	189 18.60	185 18.21	366 36.02	267 26.28	0 0.00	1016 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 15 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=UNKNOWN

EDLVL   TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	0 0.00 0.00 0.00	1 11.11 100.00 100.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 11.11
HSDG	0 0.00 0.00 .	2 22.22 28.57 100.00	0 0.00 0.00 0.00	4 44.44 57.14 80.00	1 11.11 14.29 100.00	0 0.00 0.00 .	7 77.78
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 11.11 100.00 20.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 11.11
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	2 22.22	1 11.11	5 55.56	1 11.11	0 0.00	9 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 16 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=WHITE

EDLVL / TSC44 FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	162 3.74 34.03 36.82	295 6.82 61.97 14.36	14 0.32 2.94 1.85	4 0.09 0.84 0.53	1 0.02 0.21 0.32	0 0.00 0.00 0.00	476 11.00
HSDG	274 6.33 8.05 62.27	1596 36.88 46.91 77.66	591 13.66 17.37 77.97	623 14.39 18.31 82.41	316 7.30 9.29 99.68	2 0.05 0.06 100.00	3402 78.60
GED	2 0.05 2.30 0.45	39 0.90 44.83 1.90	27 0.62 31.03 3.56	19 0.44 21.84 2.51	0 0.00 0.00 0.00	0 0.00 0.00 0.00	87 2.01
NNHSG	2 0.05 0.55 0.45	125 2.89 34.44 6.08	126 2.91 34.71 16.62	110 2.54 30.30 14.55	0 0.00 0.00 0.00	0 0.00 0.00 0.00	363 8.39
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	440 10.17	2055 47.48	758 17.51	756 17.47	317 7.32	2 0.05	4328 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 17 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=BLACK

EDLVL   TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	5 0.34 8.33 55.56	35 2.36 58.33 15.28	14 0.95 23.33 5.07	5 0.34 8.33 0.92	1 0.07 1.67 0.24	0 0.00 0.00 .	60 4.05
HSDG	4 0.27 0.30 44.44	185 12.49 13.67 80.79	237 16.00 17.52 85.87	508 34.30 37.55 93.04	419 28.29 30.97 99.52	0 0.00 0.00 .	1353 91.36
GED	0 0.00 0.00 0.00	4 0.27 14.81 1.75	15 1.01 55.56 5.43	8 0.54 29.63 1.47	0 0.00 0.00 0.00	0 0.00 0.00 .	27 1.82
NNHSG	0 0.00 0.00 0.00	5 0.34 12.20 2.18	10 0.68 24.39 3.62	25 1.69 60.98 4.58	1 0.07 2.44 0.24	0 0.00 0.00 .	41 2.77
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	9 0.61	229 15.46	276 18.64	546 36.87	421 28.43	0 0.00	1481 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 18 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	6	5	10	2	0	24
	0.35	2.13	1.77	3.55	0.71	0.00	8.51
	4.17	25.00	20.83	41.67	8.33	0.00	
	50.00	16.22	9.80	9.17	2.41	.	
HSDG	1	30	37	90	81	0	239
	0.35	10.64	13.12	31.91	28.72	0.00	84.75
	0.42	12.55	15.48	37.66	33.89	0.00	
	50.00	81.08	72.55	82.57	97.59	.	
GED	0	0	1	4	0	0	5
	0.00	0.00	0.35	1.42	0.00	0.00	1.77
	0.00	0.00	20.00	80.00	0.00	0.00	
	0.00	0.00	1.96	3.67	0.00	.	
NNHSG	0	1	8	5	0	0	14
	0.00	0.35	2.84	1.77	0.00	0.00	4.96
	0.00	7.14	57.14	35.71	0.00	0.00	
	0.00	2.70	15.69	4.59	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	2	37	51	109	83	0	282
	0.71	13.12	18.09	38.65	29.43	0.00	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 19 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.56 7.14 16.67	10 5.65 71.43 20.41	2 1.13 14.29 5.71	0 0.00 0.00 0.00	1 0.56 7.14 3.33	0 0.00 0.00 .	14 7.91
HSDG	5 2.82 3.45 83.33	35 19.77 24.14 71.43	28 15.82 19.31 80.00	49 27.68 33.79 85.96	28 15.82 19.31 93.33	0 0.00 0.00 .	145 81.92
GED	0 0.00 0.00 0.00	1 0.56 50.00 2.04	0 0.00 0.00 0.00	1 0.56 50.00 1.75	0 0.00 0.00 0.00	0 0.00 0.00 .	2 1.13
NNHSG	0 0.00 0.00 0.00	3 1.69 18.75 6.12	5 2.82 31.25 14.29	7 3.95 43.75 12.28	1 0.56 6.25 3.33	0 0.00 0.00 .	16 9.04
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	6 3.39	49 27.68	35 19.77	57 32.20	30 16.95	0 0.00	177 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 20 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 33.33 50.00 50.00	0 0.00 0.00 .	1 33.33 50.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	2 66.67
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 0.00 .	1 33.33 100.00 50.00	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	1 33.33
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	2 66.67	0 0.00	1 33.33	0 0.00	0 0.00	3 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 21 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	5 0.48 35.71 11.11	8 0.77 57.14 2.45	1 0.10 7.14 0.39	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	14 1.34
HSDG	38 3.65 4.63 84.44	273 26.20 33.29 83.49	177 16.99 21.59 69.14	209 20.06 25.49 72.07	122 11.71 14.88 99.19	1 0.10 0.12 100.00	820 78.69
GED	1 0.10 2.78 2.22	12 1.15 33.33 3.67	14 1.34 38.89 5.47	8 0.77 22.22 2.76	1 0.10 2.78 0.81	0 0.00 0.00 0.00	36 3.45
NNHSG	1 0.10 0.58 2.22	34 3.26 19.77 10.40	64 6.14 37.21 25.00	73 7.01 42.44 25.17	0 0.00 0.00 0.00	0 0.00 0.00 0.00	172 16.51
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	45 4.32	327 31.38	256 24.57	290 27.83	123 11.80	1 0.10	1042 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 22 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	3 0.75 27.27 7.14	4 1.00 36.36 6.90	3 0.75 27.27 2.16	1 0.25 9.09 0.62	0 0.00 0.00 .	11 2.75
HSDG	0 0.00 0.00 .	34 8.50 9.42 80.95	48 12.00 13.30 82.76	120 30.00 33.24 86.33	159 39.75 44.04 98.76	0 0.00 0.00 .	361 90.25
GED	0 0.00 0.00 .	2 0.50 50.00 4.76	2 0.50 50.00 3.45	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	4 1.00
NNHSG	0 0.00 0.00 .	3 0.75 12.50 7.14	4 1.00 16.67 6.90	16 4.00 66.67 11.51	1 0.25 4.17 0.62	0 0.00 0.00 .	24 6.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	42 10.50	58 14.50	139 34.75	161 40.25	0 0.00	400 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 23 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL TSC44

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.39 50.00 9.09	1 1.39 50.00 4.17	0 0.00 0.00 0.00	0 0.00 0.00 .	2 2.78
HSDG	1 1.39 1.72 100.00	2 2.78 3.45 66.67	6 8.33 10.34 54.55	17 23.61 29.31 70.83	32 44.44 55.17 96.97	0 0.00 0.00 .	58 80.56
GED	0 0.00 0.00 0.00	1 1.39 33.33 33.33	1 1.39 33.33 9.09	0 0.00 0.00 0.00	1 1.39 33.33 3.03	0 0.00 0.00 .	3 4.17
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 4.17 33.33 27.27	6 8.33 66.67 25.00	0 0.00 0.00 0.00	0 0.00 0.00 .	9 12.50
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	1 1.39	3 4.17	11 15.28	24 33.33	33 45.83	0 0.00	72 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 24 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 2.13 100.00 5.00	0 0.00 0.00 .	1 2.13
HSDG	0 0.00 0.00 .	1 2.13 2.44 50.00	7 14.89 17.07 77.78	14 29.79 34.15 87.50	19 40.43 46.34 95.00	0 0.00 0.00 .	41 87.23
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 0.00 .	1 2.13 20.00 50.00	2 4.26 40.00 22.22	2 4.26 40.00 12.50	0 0.00 0.00 0.00	0 0.00 0.00 .	5 10.64
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	2 4.26	9 19.15	16 34.04	20 42.55	0 0.00	47 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 25 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	1 50.00 100.00 100.00	0 0.00 0.00 .	1 50.00
HSDG	0 0.00 0.00 .	1 50.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	1 50.00
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 50.00	0 0.00	0 0.00	1 50.00	0 0.00	2 100.00

SEVERAL PERTINENT STA. .ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 26 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	14 0.71 25.45 14.58	36 1.82 65.45 5.08	2 0.10 3.64 0.52	0 0.00 0.00 0.00	1 0.05 1.82 0.91	2 0.10 3.64 1.48	55 2.79
HSDG	75 3.80 5.65 78.13	555 28.13 41.79 78.39	259 13.13 19.50 67.27	271 13.74 20.41 50.28	80 4.05 6.02 72.73	88 4.46 6.63 65.19	1328 67.31
GED	7 0.35 1.28 7.29	116 5.88 21.17 16.38	119 6.03 21.72 30.91	256 12.98 46.72 47.50	14 0.71 2.55 12.73	36 1.82 6.57 26.67	548 27.77
NNHSG	0 0.00 0.00 0.00	1 0.05 2.44 0.14	5 0.25 12.20 1.30	12 0.61 29.27 2.23	15 0.76 36.59 13.64	8 0.41 19.51 5.93	41 2.08
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.05 100.00 0.74	1 0.05
TOTAL	96 4.87	708 35.88	385 19.51	539 27.32	110 5.58	135 6.84	1973 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 27 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	6	1	4	0	0	11
	0.00	0.81	0.14	0.54	0.00	0.00	1.49
	0.00	54.55	9.09	36.36	0.00	0.00	
	0.00	7.79	0.98	1.39	0.00	0.00	
HSDG	1	65	78	219	127	110	600
	0.14	8.80	10.55	29.63	17.19	14.88	81.19
	0.17	10.83	13.00	36.50	21.17	18.33	
	100.00	84.42	76.47	76.31	90.07	83.97	
GED	0	6	22	61	8	12	109
	0.00	0.81	2.98	8.25	1.08	1.62	14.75
	0.00	5.50	20.18	55.96	7.34	11.01	
	0.00	7.79	21.57	21.25	5.67	9.16	
NNHSG	0	0	1	3	6	9	19
	0.00	0.00	0.14	0.41	0.81	1.22	2.57
	0.00	0.00	5.26	15.79	31.58	47.37	
	0.00	0.00	0.98	1.05	4.26	6.87	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	1	77	102	287	141	131	739
	0.14	10.42	13.80	38.84	19.08	17.73	100.00

SEVERAL PERTINENT STA. .ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 28 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	1 0.61 16.67 8.33	2 1.23 33.33 7.14	3 1.84 50.00 4.11	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 3.68
HSDG	0 0.00 0.00 .	10 6.13 8.70 83.33	17 10.43 14.78 60.71	48 29.45 41.74 65.75	29 17.79 25.22 80.56	11 6.75 9.57 78.57	115 70.55
GED	0 0.00 0.00 .	1 0.61 2.56 8.33	9 5.52 23.08 32.14	21 12.88 53.85 28.77	7 4.29 17.95 19.44	1 0.61 2.56 7.14	39 23.93
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.61 33.33 1.37	0 0.00 0.00 0.00	2 1.23 66.67 14.29	3 1.84
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	12 7.36	28 17.18	73 44.79	36 22.09	14 8.59	163 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 29 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	1	0	2	0	1	4
	0.00	1.12	0.00	2.25	0.00	1.12	4.49
	0.00	25.00	0.00	50.00	0.00	25.00	
	0.00	5.00	0.00	6.45	0.00	20.00	
HSDG	0	14	14	20	12	3	63
	0.00	15.73	15.73	22.47	13.48	3.37	70.79
	0.00	22.22	22.22	31.75	19.05	4.76	
	0.00	70.00	87.50	64.52	75.00	60.00	
GED	1	5	2	9	3	0	20
	1.12	5.62	2.25	10.11	3.37	0.00	22.47
	5.00	25.00	10.00	45.00	15.00	0.00	
	100.00	25.00	12.50	29.03	18.75	0.00	
NNHSG	0	0	0	0	1	1	2
	0.00	0.00	0.00	0.00	1.12	1.12	2.25
	0.00	0.00	0.00	0.00	50.00	50.00	
	0.00	0.00	0.00	0.00	6.25	20.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	1	20	16	31	16	5	89
	1.12	22.47	17.98	34.83	17.98	5.62	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 30 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
GED	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
TOTAL	0 0.00	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	1 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 31 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	24 1.07 32.00 16.22	44 1.97 58.67 4.76	3 0.13 4.00 0.72	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.18 5.33 2.38	75 3.35
HSDG	116 5.18 6.94 78.38	750 33.50 44.88 81.08	299 13.35 17.89 71.53	311 13.89 18.61 63.08	65 2.90 3.89 74.71	130 5.81 7.78 77.38	1671 74.63
GED	8 0.36 1.68 5.41	130 5.81 27.37 14.05	115 5.14 24.21 27.51	176 7.86 37.05 35.70	15 0.67 3.16 17.24	31 1.38 6.53 18.45	475 21.21
NNHSG	0 0.00 0.00 0.00	1 0.04 5.56 0.11	1 0.04 5.56 0.24	6 0.27 33.33 1.22	7 0.31 38.89 8.05	3 0.13 16.67 1.79	18 0.80
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	148 6.61	925 41.31	418 18.67	493 22.02	87 3.89	168 7.50	2239 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 32 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	8	2	10	2	1	23
	0.00	0.87	0.22	1.09	0.22	0.11	2.51
	0.00	34.78	8.70	43.48	8.70	4.35	
	0.00	7.55	1.25	2.65	1.50	0.72	
HSDG	2	87	129	293	128	131	770
	0.22	9.49	14.07	31.95	13.96	14.29	83.97
	0.26	11.30	16.75	38.05	16.62	17.01	
	100.00	82.08	80.63	77.51	96.24	94.93	
GED	0	11	28	72	2	3	116
	0.00	1.20	3.05	7.85	0.22	0.33	12.65
	0.00	9.48	24.14	62.07	1.72	2.59	
	0.00	10.38	17.50	19.05	1.50	2.17	
NNHSG	0	0	1	3	1	3	8
	0.00	0.00	0.11	0.33	0.11	0.33	0.87
	0.00	0.00	12.50	37.50	12.50	37.50	
	0.00	0.00	0.63	0.79	0.75	2.17	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	2	106	160	378	133	138	917
	0.22	11.56	17.45	41.22	14.50	15.05	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 33 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	1 0.46 9.09 3.45	2 0.93 18.18 5.00	6 2.78 54.55 6.74	2 0.93 18.18 6.25	0 0.00 0.00 0.00	11 5.09
HSDG	3 1.39 1.85 75.00	26 12.04 16.05 89.66	28 12.96 17.28 70.00	58 26.85 35.80 65.17	26 12.04 16.05 81.25	21 9.72 12.96 95.45	162 75.00
GED	1 0.46 2.56 25.00	2 0.93 5.13 6.90	10 4.63 25.64 25.00	24 11.11 61.54 26.97	1 0.46 2.56 3.13	1 0.46 2.56 4.55	39 18.06
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.46 25.00 1.12	3 1.39 75.00 9.38	0 0.00 0.00 0.00	4 1.85
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	4 1.85	29 13.43	40 18.52	89 41.20	32 14.81	22 10.19	216 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 34 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	1 1.27 50.00 8.33	0 0.00 0.00 0.00	1 1.27 50.00 2.94	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 2.53
HSDG	0 0.00 0.00 .	11 13.92 17.74 91.67	11 13.92 17.74 84.62	21 26.58 33.87 61.76	11 13.92 17.74 91.67	8 10.13 12.90 100.00	62 78.48
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	1 1.27 7.69 7.69	11 13.92 84.62 32.35	1 1.27 7.69 8.33	0 0.00 0.00 0.00	13 16.46
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	1 1.27 50.00 7.69	1 1.27 50.00 2.94	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 2.53
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	12 15.19	13 16.46	34 43.04	12 15.19	8 10.13	79 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 35 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
GED	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
TOTAL	0 0.00	0 0.00	0 0.00	1 100.00	0 0.00	0 0.00	1 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 36 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	13 0.76 34.21 19.70	21 1.23 55.26 3.47	3 0.18 7.89 0.88	1 0.06 2.63 0.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	38 2.23
HSDG	49 2.88 4.78 74.24	436 25.63 42.50 72.07	201 11.82 19.59 58.77	240 14.11 23.39 45.54	65 3.82 6.34 77.38	35 2.06 3.41 45.45	1026 60.32
GED	4 0.24 0.66 6.06	145 8.52 23.81 23.97	132 7.76 21.67 38.60	281 16.52 46.14 53.32	11 0.65 1.81 13.10	36 2.12 5.91 46.75	609 35.80
NNHSG	0 0.00 0.00 0.00	3 0.18 10.71 0.50	6 0.35 21.43 1.75	5 0.29 17.86 0.95	8 0.47 28.57 9.52	6 0.35 21.43 7.79	28 1.65
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	66 3.88	605 35.57	342 20.11	527 30.98	84 4.94	77 4.53	1701 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 37 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=BLACK

EDLVL	TSC44						
FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	6	2	1	0	0	10
	0.22	1.33	0.44	0.22	0.00	0.00	2.22
	10.00	60.00	20.00	10.00	0.00	0.00	
	50.00	11.32	2.63	0.50	0.00	0.00	
HSDG	1	39	54	117	51	46	308
	0.22	8.65	11.97	25.94	11.31	10.20	68.29
	0.32	12.66	17.53	37.99	16.56	14.94	
	50.00	73.58	71.05	58.21	86.44	76.67	
GED	0	8	20	80	3	12	123
	0.00	1.77	4.43	17.74	0.67	2.66	27.27
	0.00	6.50	16.26	65.04	2.44	9.76	
	0.00	15.09	26.32	39.80	5.08	20.00	
NNHSG	0	0	0	3	5	2	10
	0.00	0.00	0.00	0.67	1.11	0.44	2.22
	0.00	0.00	0.00	30.00	50.00	20.00	
	0.00	0.00	0.00	1.49	8.47	3.33	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	2	53	76	201	59	60	451
	0.44	11.75	16.85	44.57	13.08	13.30	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 38 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL / TSC44 FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	3 3.26 75.00 23.08	1 1.09 25.00 7.14	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 4.35
HSDG	0 0.00 0.00 .	9 9.78 15.79 69.23	9 9.78 15.79 64.29	27 29.35 47.37 51.92	11 11.96 19.30 100.00	1 1.09 1.75 50.00	57 61.96
GED	0 0.00 0.00 .	1 1.09 3.23 7.69	4 4.35 12.90 28.57	25 27.17 80.65 48.08	0 0.00 0.00 0.00	1 1.09 3.23 50.00	31 33.70
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	13 14.13	14 15.22	52 56.52	11 11.96	2 2.17	92 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 39 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=OTHER

EDLVL / FREQUENCY, PERCENT, ROW PCT, COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	1	0	0	0	0	1
	0.00	1.89	0.00	0.00	0.00	0.00	1.89
	0.00	100.00	0.00	0.00	0.00	0.00	
	.	8.33	0.00	0.00	0.00	0.00	
HSDG	0	11	7	13	4	4	39
	0.00	20.75	13.21	24.53	7.55	7.55	73.58
	0.00	28.21	17.95	33.33	10.26	10.26	
	.	91.67	87.50	59.09	66.67	80.00	
GED	0	0	1	9	2	1	13
	0.00	0.00	1.89	16.98	3.77	1.89	24.53
	0.00	0.00	7.69	69.23	15.38	7.69	
	.	0.00	12.50	40.91	33.33	20.00	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	0.00	
TOTAL	0	12	8	22	6	5	53
	0.00	22.64	15.09	41.51	11.32	9.43	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 40 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 41 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	43 6.35 34.40 47.25	74 10.93 59.20 21.64	2 0.30 1.60 2.27	2 0.30 1.60 2.06	0 0.00 0.00 0.00	4 0.59 3.20 7.69	125 18.46
HSDG	45 6.65 10.00 49.45	237 35.01 52.67 69.30	63 9.31 14.00 71.59	58 8.57 12.89 59.79	6 0.89 1.33 85.71	41 6.06 9.11 78.85	450 66.47
GED	3 0.44 2.94 3.30	31 4.58 30.39 9.06	23 3.40 22.55 26.14	37 5.47 36.27 38.14	1 0.15 0.98 14.29	7 1.03 6.86 13.46	102 15.07
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	91 13.44	342 50.52	88 13.00	97 14.33	7 1.03	52 7.68	677 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 42 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	4 2.09 40.00 11.11	4 2.09 40.00 10.81	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 1.05 20.00 10.00	10 5.24
HSDG	2 1.05 1.32 100.00	27 14.14 17.76 75.00	28 14.66 18.42 75.68	65 34.03 42.76 78.31	13 6.81 8.55 100.00	17 8.90 11.18 85.00	152 79.58
GED	0 0.00 0.00 0.00	5 2.62 17.24 13.89	5 2.62 17.24 13.51	18 9.42 62.07 21.69	0 0.00 0.00 0.00	1 0.52 3.45 5.00	29 15.18
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	2 1.05	36 18.85	37 19.37	83 43.46	13 6.81	20 10.47	191 100.00

SEVERAL PERTINENT STA...ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 43 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	2 5.41 66.67 18.18	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 2.70 33.33 100.00	0 0.00 0.00 0.00	3 8.11
HSDG	1 2.70 3.57 100.00	7 18.92 25.00 63.64	6 16.22 21.43 85.71	10 27.03 35.71 76.92	0 0.00 0.00 0.00	4 10.81 14.29 100.00	28 75.68
GED	0 0.00 0.00 0.00	1 2.70 20.00 9.09	1 2.70 20.00 14.29	3 8.11 60.00 23.08	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 13.51
NNHSG	0 0.00 0.00 0.00	1 2.70 100.00 9.09	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 2.70
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	1 2.70	11 29.73	7 18.92	13 35.14	1 2.70	4 10.81	37 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 44 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	2 9.09 100.00 20.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 9.09
HSDG	1 4.55 6.67 100.00	7 31.82 46.67 70.00	1 4.55 6.67 100.00	5 22.73 33.33 71.43	1 4.55 6.67 50.00	0 0.00 0.00 0.00	15 68.18
GED	0 0.00 0.00 0.00	1 4.55 25.00 10.00	0 0.00 0.00 0.00	1 4.55 25.00 14.29	1 4.55 25.00 50.00	1 4.55 25.00 100.00	4 18.18
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 4.55 100.00 14.29	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 4.55
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	1 4.55	10 45.45	1 4.55	7 31.82	2 9.09	1 4.55	22 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 45 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 46 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	4 4.26 66.67 50.00	2 2.13 33.33 6.45	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 6.38
HSDG	4 4.26 6.45 50.00	25 26.60 40.32 80.65	12 12.77 19.35 66.67	9 9.57 14.52 47.37	8 8.51 12.90 88.89	4 4.26 6.45 44.44	62 65.96
GED	0 0.00 0.00 0.00	4 4.26 16.67 12.90	6 6.38 25.00 33.33	10 10.64 41.67 52.63	0 0.00 0.00 0.00	4 4.26 16.67 44.44	24 25.53
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.06 50.00 11.11	1 1.06 50.00 11.11	2 2.13
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	8 8.51	31 32.98	18 19.15	19 20.21	9 9.57	9 9.57	94 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 47 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	1	1	0	0	0	2
	0.00	3.03	3.03	0.00	0.00	0.00	6.06
	0.00	50.00	50.00	0.00	0.00	0.00	
	0.00	25.00	20.00	0.00	0.00	0.00	
HSDG	1	2	4	3	7	7	24
	3.03	6.06	12.12	9.09	21.21	21.21	72.73
	4.17	8.33	16.67	12.50	29.17	29.17	
	100.00	50.00	80.00	42.86	87.50	87.50	
GED	0	1	0	4	0	1	6
	0.00	3.03	0.00	12.12	0.00	3.03	18.18
	0.00	16.67	0.00	66.67	0.00	16.67	
	0.00	25.00	0.00	57.14	0.00	12.50	
NNHSG	0	0	0	0	1	0	1
	0.00	0.00	0.00	0.00	3.03	0.00	3.03
	0.00	0.00	0.00	0.00	100.00	0.00	
	0.00	0.00	0.00	0.00	12.50	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	1	4	5	7	8	8	33
	3.03	12.12	15.15	21.21	24.24	24.24	100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 48 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
HSDG	0 0.00 0.00 .	2 28.57 33.33 100.00	0 0.00 0.00 .	2 28.57 33.33 100.00	0 0.00 0.00 .	2 28.57 33.33 66.67	6 85.71
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	1 14.29 100.00 33.33	1 14.29
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	2 28.57	0 0.00	2 28.57	0 0.00	3 42.86	7 100.00

THIS IS FOR FISCAL YEAR 1982

TABLE 49 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	0.00	
HSDG	0	1	0	2	0	1	4
	0.00	16.67	0.00	33.33	0.00	16.67	66.67
	0.00	25.00	0.00	50.00	0.00	25.00	
	.	100.00	0.00	100.00	0.00	100.00	
GED	0	0	1	0	1	0	2
	0.00	0.00	16.67	0.00	16.67	0.00	33.33
	0.00	0.00	50.00	0.00	50.00	0.00	
	.	0.00	100.00	0.00	100.00	0.00	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	0.00	
TOTAL	0	1	1	2	1	1	6
	0.00	16.67	16.67	33.33	16.67	16.67	100.00

SEVERAL PERTINENT STA. .ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

TABLE 50 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00
HSDG	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00
GED	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00 100.00 100.00	1 100.00
TOTAL	0 0.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00	1 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
AFQT44	127984	52.40	22.41	0	99.00	99.00	42.77
GT80	127984	101.70	16.58	0	130.00	130.00	16.30

SEVERAL PERTINENT STA. .ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1982

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
SPSTT=ETS							
AFQT44	49578	53.70	22.92	0	99.00	99.00	42.68
GT80	49578	102.55	16.60	0	130.00	130.00	16.19
SPSTT=REUP							
AFQT44	28510	49.86	22.47	0	99.00	99.00	45.06
GT80	28510	99.56	18.03	0	130.00	130.00	18.11
SPSTT=ATTRIT							
AFQT44	40994	51.40	21.02	0	99.00	99.00	40.89
GT80	40994	101.48	14.77	0	130.00	130.00	14.56
SPSTT=STILL IN							
AFQT44	7198	59.70	24.03	0	99.00	99.00	40.25
GT80	7198	105.98	18.38	0	130.00	130.00	17.34
SPSTT=BAD DATA							
AFQT44	1704	49.95	22.65	0	99.00	99.00	45.35
GT80	1704	99.77	18.24	0	130.00	130.00	18.28

THIS IS FOR FISCAL YEAR 1982

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
PS=NPS							
AFQT44	118202	52.41	22.08	0	99.00	99.00	42.12
GT80	118202	102.13	14.38	0	130.00	130.00	14.08
PS=PS							
AFQT44	9782	52.19	26.11	0	99.00	99.00	50.03
GT80	9782	96.50	32.66	0	130.00	130.00	33.84

THIS IS FOR FISCAL YEAR 1982

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
PS=NPS SPSTT=ETS							
AFQT44	46613	53.97	22.69	1.00	99.00	98.00	42.04
GT80	46613	103.08	14.76	0.00	130.00	130.00	14.32
PS=NPS SPSTT=REUP							
AFQT44	25058	49.56	21.84	1.00	99.00	98.00	44.07
GT80	25058	100.07	14.45	0.00	130.00	130.00	14.44
PS=NPS SPSTT=ATTRIT							
AFQT44	38697	51.35	20.83	10.00	99.00	89.00	40.56
GT80	38697	101.66	13.52	0.00	130.00	130.00	13.30
PS=NPS SPSTT=STILL IN							
AFQT44	6271	59.40	23.46	0	99.00	99.00	39.50
GT80	6271	106.49	14.91	0	130.00	130.00	14.00
PS=NPS SPSTT=BAD DATA							
AFQT44	1563	50.08	21.82	0	99.00	99.00	43.57
GT80	1563	100.63	14.39	0	130.00	130.00	14.30
PS=PS SPSTT=ETS							
AFQT44	2965	49.54	25.91	0	99.00	99.00	52.31
GT80	2965	94.31	33.32	0	130.00	130.00	35.33
PS=PS SPSTT=REUP							
AFQT44	3452	51.99	26.48	0	99.00	99.00	50.93
GT80	3452	95.80	33.96	0	130.00	130.00	35.45
PS=PS SPSTT=ATTRIT							
AFQT44	2297	52.28	23.98	0	99.00	99.00	45.87
GT80	2297	98.33	28.35	0	130.00	130.00	28.83
PS=PS SPSTT=STILL IN							
AFQT44	927	61.76	27.49	0	99.00	99.00	44.50
GT80	927	102.54	33.25	0	130.00	130.00	32.43
PS=PS SPSTT=BAD DATA							
AFQT44	141	48.54	30.46	0	98.00	98.00	62.75
GT80	141	90.25	40.47	0	130.00	130.00	44.85

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

PS	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
NPS	132168	91.3	132168	91.3
PS	12635	8.7	144803	100.0

SPSTT	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
ETS	57026	39.4	57026	39.4
REUP	30669	21.2	87695	60.6
ATTRIT	44087	30.4	131782	91.0
STILL IN	11722	8.1	143504	99.1
BAD DATA	1299	0.9	144803	100.0

TSC44	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
I	5230	3.6	5230	3.6
II	48082	33.2	53312	36.8
IIIA	35655	24.6	88967	61.4
IIIB	39797	27.5	128764	88.9
IV	15861	11.0	144625	99.9
UNKNOWN	178	0.1	144803	100.0

MC44	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
I-IIIA	88967	61.4	88967	61.4
IIIB	39797	27.5	128764	88.9
IV	15861	11.0	144625	99.9
UNKNOWN	178	0.1	144803	100.0

EDLVL	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
COL GRAD	4006	2.8	4006	2.8
HSDG	120675	83.3	124681	86.1
GED	9481	6.5	134162	92.7
NNHSG	10639	7.3	144801	100.0
UNKNOWN	2	0.0	144803	100.0

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

HSGRAD	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
HS GRAD	124681	86.1	124681	86.1
NON HSG	20120	13.9	144801	100.0
UNKNOWN	2	0.0	144803	100.0

RETHGP	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
WHITE	104024	71.8	104024	71.8
BLACK	31625	21.8	135649	93.7
HISAPNIC	5114	3.5	140763	97.2
OTHER	3998	2.8	144761	100.0
UNKNOWN	42	0.0	144803	100.0

SEX	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
MALE	126953	87.7	126953	87.7
FEMALE	17850	12.3	144803	100.0

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	891 0.86 33.98 17.81	1561 1.50 59.53 3.71	123 0.12 4.69 0.46	39 0.04 1.49 0.17	5 0.00 0.19 0.08	3 0.00 0.11 2.24	2622 2.52
HSDG	3933 3.78 4.65 78.61	34715 33.37 41.06 82.60	19541 18.79 23.12 72.46	19760 19.00 23.37 84.63	6524 6.27 7.72 99.72	64 0.06 0.08 47.76	84537 81.27
GED	102 0.10 1.31 2.04	2695 2.59 34.73 6.41	2964 2.85 38.20 10.99	1926 1.85 24.82 8.25	5 0.00 0.06 0.08	67 0.06 0.86 50.00	7759 7.46
NNHSG	77 0.07 0.85 1.54	3057 2.94 33.58 7.27	4337 4.17 47.64 16.08	1625 1.56 17.85 6.96	8 0.01 0.09 0.12	0 0.00 0.00 0.00	9104 8.75
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.00 100.00 0.01	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.00
TOTAL	5003 4.81	42028 40.40	26967 25.92	23350 22.45	6542 6.29	134 0.13	104024 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	24 0.08 2.56 19.51	414 1.31 44.14 9.64	262 0.83 27.93 4.02	197 0.62 21.00 1.50	39 0.12 4.16 0.52	2 0.01 0.21 5.41	938 2.97
HSDG	93 0.29 0.33 75.61	3475 10.99 12.20 80.89	5340 16.89 18.75 82.03	12088 38.22 42.43 91.99	7471 23.62 26.23 99.36	20 0.06 0.07 54.05	28487 90.08
GED	5 0.02 0.41 4.07	218 0.69 18.08 5.07	450 1.42 37.31 6.91	510 1.61 42.29 3.88	8 0.03 0.66 0.11	15 0.05 1.24 40.54	1206 3.81
NNHSG	1 0.00 0.10 0.81	189 0.60 19.01 4.40	458 1.45 46.08 7.04	345 1.09 34.71 2.63	1 0.00 0.10 0.01	0 0.00 0.00 0.00	994 3.14
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	123 0.39	4296 13.58	6510 20.58	13140 41.55	7519 23.78	37 0.12	31625 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	5 0.10 2.10 22.73	57 1.11 23.95 6.98	61 1.19 25.63 4.98	78 1.53 32.77 3.95	37 0.72 15.55 3.46	0 0.00 0.00 0.00	238 4.65
HSDG	14 0.27 0.33 63.64	651 12.73 15.14 79.68	892 17.44 20.74 72.76	1712 33.48 39.80 86.60	1031 20.16 23.97 96.54	1 0.02 0.02 25.00	4301 84.10
GED	0 0.00 0.00 0.00	55 1.08 19.23 6.73	124 2.42 43.36 10.11	104 2.03 36.36 5.26	0 0.00 0.00 0.00	3 0.06 1.05 75.00	286 5.59
NNHSG	3 0.06 1.04 13.64	54 1.06 18.69 6.61	149 2.91 51.56 12.15	83 1.62 28.72 4.20	0 0.00 0.00 0.00	0 0.00 0.00 0.00	289 5.65
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	22 0.43	817 15.98	1226 23.97	1977 38.66	1068 20.88	4 0.08	5114 100.00

THIS IS FOR FISCAL YEAR 1983

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	17	74	58	44	14	0	207
	0.43	1.85	1.45	1.10	0.35	0.00	5.18
	8.21	35.75	28.02	21.26	6.76	0.00	
	21.52	7.97	6.12	3.34	1.93	0.00	
HSDG	58	730	700	1113	709	3	3313
	1.45	18.26	17.51	27.84	17.73	0.08	82.87
	1.75	22.03	21.13	33.59	21.40	0.09	
	73.42	78.66	73.92	84.51	97.93	100.00	
GED	3	56	85	82	0	0	226
	0.08	1.40	2.13	2.05	0.00	0.00	5.65
	1.33	24.78	37.61	36.28	0.00	0.00	
	3.80	6.03	8.98	6.23	0.00	0.00	
NNHSG	1	68	104	78	1	0	252
	0.03	1.70	2.60	1.95	0.03	0.00	6.30
	0.40	26.98	41.27	30.95	0.40	0.00	
	1.27	7.33	10.98	5.92	0.14	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	79	928	947	1317	724	3	3998
	1.98	23.21	23.69	32.94	18.11	0.08	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=UNKNOWN

EDLVL / TSC44 FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 2.38 100.00 33.33	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 2.38
HSDG	2 4.76 5.41 66.67	11 26.19 29.73 84.62	4 9.52 10.81 80.00	12 28.57 32.43 92.31	8 19.05 21.62 100.00	0 0.00 0.00 .	37 88.10
GED	0 0.00 0.00 0.00	2 4.76 50.00 15.38	1 2.38 25.00 20.00	1 2.38 25.00 7.69	0 0.00 0.00 0.00	0 0.00 0.00 .	4 9.52
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	3 7.14	13 30.95	5 11.90	13 30.95	8 19.05	0 0.00	42 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE OF SPSTT BY TSC44

SPSTT TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	2349 1.62 4.12 44.91	20712 14.30 36.32 43.08	13485 9.31 23.65 37.82	14238 9.83 24.97 35.78	6193 4.28 10.86 39.05	49 0.03 0.09 27.53	57026 39.38
REUP	839 0.58 2.74 16.04	8892 6.14 28.99 18.49	7116 4.91 23.20 19.96	9827 6.79 32.04 24.69	3941 2.72 12.85 24.85	54 0.04 0.18 30.34	30669 21.18
ATTRIT	1078 0.74 2.45 20.61	13503 9.33 30.63 28.08	12140 8.38 27.54 34.05	12534 8.66 28.43 31.49	4794 3.31 10.87 30.23	38 0.03 0.09 21.35	44087 30.45
STILL IN	912 0.63 7.78 17.44	4517 3.12 38.53 9.39	2567 1.77 21.90 7.20	2871 1.98 24.49 7.21	822 0.57 7.01 5.18	33 0.02 0.28 18.54	11722 8.10
BAD DATA	52 0.04 4.00 0.99	458 0.32 35.26 0.95	347 0.24 26.71 0.97	327 0.23 25.17 0.82	111 0.08 8.55 0.70	4 0.00 0.31 2.25	1299 0.90
TOTAL	5230 3.61	48082 33.21	35655 24.62	39797 27.48	15861 10.95	178 0.12	144803 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE OF SPSTT BY MC44

SPSTT MC44

FREQUENCY PERCENT ROW PCT COL PCT	I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	36546 25.24 64.09 41.08	14238 9.83 24.97 35.78	6193 4.28 10.86 39.05	49 0.03 0.09 27.53	57026 39.38
REUP	16847 11.63 54.93 18.94	9827 6.79 32.04 24.69	3941 2.72 12.85 24.85	54 0.04 0.18 30.34	30669 21.18
ATTRIT	26721 18.45 60.61 30.03	12534 8.66 28.43 31.49	4794 3.31 10.87 30.23	38 0.03 0.09 21.35	44087 30.45
STILL IN	7996 5.52 68.21 8.99	2871 1.98 24.49 7.21	822 0.57 7.01 5.18	33 0.02 0.28 18.54	11722 8.10
BAD DATA	857 0.59 65.97 0.96	327 0.23 25.17 0.82	111 0.08 8.55 0.70	4 0.00 0.31 2.25	1299 0.90
TOTAL	88967 61.44	39797 27.48	15861 10.95	178 0.12	144803 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE OF SPSTT BY EDLVL

SPSTT EDLVL

FREQUENCY / PERCENT / ROW PCT / COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	1398	49980	2751	2896	1	57026
	0.97	34.52	1.90	2.00	0.00	39.38
	2.45	87.64	4.82	5.08	0.00	
	34.90	41.42	29.02	27.22	50.00	
REUP	733	26388	2035	1513	0	30669
	0.51	18.22	1.41	1.04	0.00	21.18
	2.39	86.04	6.64	4.93	0.00	
	18.30	21.87	21.46	14.22	0.00	
ATTRIT	777	33746	3931	5632	1	44087
	0.54	23.30	2.71	3.89	0.00	30.45
	1.76	76.54	8.92	12.77	0.00	
	19.40	27.96	41.46	52.94	50.00	
STILL IN	1058	9522	661	481	0	11722
	0.73	6.58	0.46	0.33	0.00	8.10
	9.03	81.23	5.64	4.10	0.00	
	26.41	7.89	6.97	4.52	0.00	
BAD DATA	40	1039	103	117	0	1299
	0.03	0.72	0.07	0.08	0.00	0.90
	3.08	79.98	7.93	9.01	0.00	
	1.00	0.86	1.09	1.10	0.00	
TOTAL	4006	120675	9481	10639	2	144803
	2.77	83.34	6.55	7.35	0.00	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE OF SPSTT BY HSGRAD

SPSTT HSGRAD

FREQUENCY PERCENT ROW PCT COL PCT	HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	51378 35.48 90.10 41.21	5647 3.90 9.90 28.07	1 0.00 0.00 50.00	57026 39.38
REUP	27121 18.73 88.43 21.75	3548 2.45 11.57 17.63	0 0.00 0.00 0.00	30669 21.18
ATTRIT	34523 23.84 78.31 27.69	9563 6.60 21.69 47.53	1 0.00 0.00 50.00	44087 30.45
STILL IN	10580 7.31 90.26 8.49	1142 0.79 9.74 5.68	0 0.00 0.00 0.00	11722 8.10
BAD DATA	1079 0.75 83.06 0.87	220 0.15 16.94 1.09	0 0.00 0.00 0.00	1299 0.90
TOTAL	124681 86.10	20120 13.89	2 0.00	144803 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE OF SPSTT BY RETHGP

SPSTT / FREQUENCY / PERCENT / ROW PCT / COL PCT	RETHGP: WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	43217 29.85 75.78 41.55	10133 7.00 17.77 32.04	2017 1.39 3.54 39.44	1641 1.13 2.88 41.05	18 0.01 0.03 42.86	57026 39.38
REUP	18036 12.46 58.81 17.34	10324 7.13 33.66 32.65	1372 0.95 4.47 26.83	931 0.64 3.04 23.29	6 0.00 0.02 14.29	30669 21.18
ATTRIT	33737 23.30 76.52 32.43	8083 5.58 18.33 25.56	1209 0.83 2.74 23.64	1044 0.72 2.37 26.11	14 0.01 0.03 33.33	44087 30.45
STILL IN	8084 5.58 68.96 7.77	2823 1.95 24.08 8.93	466 0.32 3.98 9.11	345 0.24 2.94 8.63	4 0.00 0.03 9.52	11722 8.10
BAD DATA	950 0.66 73.13 0.91	262 0.18 20.17 0.83	50 0.03 3.85 0.98	37 0.03 2.85 0.93	0 0.00 0.00 0.00	1299 0.90
TOTAL	104024 71.84	31625 21.84	5114 3.53	3998 2.76	42 0.03	144803 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE OF SPSTT BY SEX

SPSTT SEX

FREQUENCY PERCENT ROW PCT COL PCT	MALE	FEMALE	TOTAL
ETS	51632 35.66 90.54 40.67	5394 3.73 9.46 30.22	57026 39.38
REUP	27010 18.65 88.07 21.28	3659 2.53 11.93 20.50	30669 21.18
ATTRIT	37067 25.60 84.08 29.20	7020 4.85 15.92 39.33	44087 30.45
STILL IN	10133 7.00 86.44 7.98	1589 1.10 13.56 8.90	11722 8.10
BAD DATA	1111 0.77 85.53 0.88	188 0.13 14.47 1.05	1299 0.90
TOTAL	126953 87.67	17850 12.33	144803 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	285 0.66 31.99 12.59	539 1.25 60.49 2.90	52 0.12 5.84 0.49	13 0.03 1.46 0.14	2 0.00 0.22 0.07	0 0.00 0.00 0.00	891 2.06
HSDG	1928 4.46 5.14 85.16	16307 37.73 43.46 87.72	8569 19.83 22.84 80.66	8020 18.56 21.37 88.99	2687 6.22 7.16 99.78	14 0.03 0.04 40.00	37525 86.83
GED	33 0.08 1.44 1.46	840 1.94 36.76 4.52	833 1.93 36.46 7.84	556 1.29 24.33 6.17	2 0.00 0.09 0.07	21 0.05 0.92 60.00	2285 5.29
NNHSG	18 0.04 0.72 0.80	904 2.09 35.94 4.86	1168 2.70 46.44 11.00	423 0.98 16.82 4.69	2 0.00 0.08 0.07	0 0.00 0.00 0.00	2515 5.82
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00 100.00 0.01	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00
TOTAL	2264 5.24	18590 43.02	10623 24.58	9012 20.85	2693 6.23	35 0.08	43217 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	6 0.06 1.76 16.22	144 1.42 42.23 10.79	106 1.05 31.09 5.27	68 0.67 19.94 1.71	16 0.16 4.69 0.58	1 0.01 0.29 7.69	341 3.37
HSDG	29 0.29 0.31 78.38	1102 10.88 11.88 82.55	1705 16.83 18.37 84.74	3700 36.51 39.87 92.94	2737 27.01 29.49 99.35	7 0.07 0.08 53.85	9280 91.58
GED	2 0.02 0.65 5.41	47 0.46 15.26 3.52	112 1.11 36.36 5.57	141 1.39 45.78 3.54	1 0.01 0.32 0.04	5 0.05 1.62 38.46	308 3.04
NNHSG	0 0.00 0.00 0.00	42 0.41 20.59 3.15	89 0.88 43.63 4.42	72 0.71 35.29 1.81	1 0.01 0.49 0.04	0 0.00 0.00 0.00	204 2.01
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	37 0.37	1335 13.17	2012 19.86	3981 39.29	2755 27.19	13 0.13	10133 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	24	22	23	12	0	82
	0.05	1.19	1.09	1.14	0.59	0.00	4.07
	1.22	29.27	26.83	28.05	14.63	0.00	
	11.11	6.82	4.72	3.06	2.74	0.00	
HSDG	8	298	355	666	426	1	1754
	0.40	14.77	17.60	33.02	21.12	0.05	86.96
	0.46	16.99	20.24	37.97	24.29	0.06	
	88.89	84.66	76.18	88.68	97.26	100.00	
GED	0	11	37	33	0	0	81
	0.00	0.55	1.83	1.64	0.00	0.00	4.02
	0.00	13.58	45.68	40.74	0.00	0.00	
	0.00	3.13	7.94	4.39	0.00	0.00	
NNHSG	0	19	52	29	0	0	100
	0.00	0.94	2.58	1.44	0.00	0.00	4.96
	0.00	19.00	52.00	29.00	0.00	0.00	
	0.00	5.40	11.16	3.86	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	9	352	466	751	438	1	2017
	0.45	17.45	23.10	37.23	21.72	0.05	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	6 0.37 7.14 16.22	36 2.19 42.86 8.37	27 1.65 32.14 7.09	12 0.73 14.29 2.45	3 0.18 3.57 0.99	0 0.00 0.00 .	84 5.12
HSDG	30 1.83 2.14 81.08	358 21.82 25.50 83.26	294 17.92 20.94 77.17	423 25.78 30.13 86.33	299 18.22 21.30 98.68	0 0.00 0.00 .	1404 85.56
GED	1 0.06 1.32 2.70	21 1.28 27.63 4.88	26 1.58 34.21 6.82	28 1.71 36.84 5.71	0 0.00 0.00 0.00	0 0.00 0.00 .	76 4.63
NNHSG	0 0.00 0.00 0.00	15 0.91 19.48 3.49	34 2.07 44.16 8.92	27 1.65 35.06 5.51	1 0.06 1.30 0.33	0 0.00 0.00 .	77 4.69
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	37 2.25	430 26.20	381 23.22	490 29.86	303 18.46	0 0.00	1641 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
HSDG	2	4	3	4	4	0	17
	11.11	22.22	16.67	22.22	22.22	0.00	94.44
	11.76	23.53	17.65	23.53	23.53	0.00	
	100.00	80.00	100.00	100.00	100.00	.	
GED	0	1	0	0	0	0	1
	0.00	5.56	0.00	0.00	0.00	0.00	5.56
	0.00	100.00	0.00	0.00	0.00	0.00	
	0.00	20.00	0.00	0.00	0.00	.	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	2	5	3	4	4	0	18
	11.11	27.78	16.67	22.22	22.22	0.00	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 6 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	132	226	19	6	2	0	385
	0.73	1.25	0.11	0.03	0.01	0.00	2.13
	34.29	58.70	4.94	1.56	0.52	0.00	
	16.82	3.11	0.42	0.14	0.19	0.00	
HSDG	613	6097	3437	3715	1053	21	14936
	3.40	33.80	19.06	20.60	5.84	0.12	82.81
	4.10	40.82	23.01	24.87	7.05	0.14	
	78.09	83.80	75.62	85.68	99.72	55.26	
GED	25	517	540	427	1	17	1527
	0.14	2.87	2.99	2.37	0.01	0.09	8.47
	1.64	33.86	35.36	27.96	0.07	1.11	
	3.18	7.11	11.88	9.85	0.09	44.74	
NNHSG	15	436	549	188	0	0	1188
	0.08	2.42	3.04	1.04	0.00	0.00	6.59
	1.26	36.70	46.21	15.82	0.00	0.00	
	1.91	5.99	12.08	4.34	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	785	7276	4545	4336	1056	38	18036
	4.35	40.34	25.20	24.04	5.85	0.21	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 7 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	6 0.06 2.54 18.75	87 0.84 36.86 6.89	66 0.64 27.97 3.23	62 0.60 26.27 1.35	15 0.15 6.36 0.63	0 0.00 0.00 0.00	236 2.29
HSDG	25 0.24 0.26 78.13	1078 10.44 11.34 85.42	1742 16.87 18.33 85.27	4276 41.42 44.99 93.38	2377 23.02 25.01 99.21	6 0.06 0.06 50.00	9504 92.06
GED	1 0.01 0.27 3.13	66 0.64 17.89 5.23	130 1.26 35.23 6.36	162 1.57 43.90 3.54	4 0.04 1.08 0.17	6 0.06 1.63 50.00	369 3.57
NNHSG	0 0.00 0.00 0.00	31 0.30 14.42 2.46	105 1.02 48.84 5.14	79 0.77 36.74 1.73	0 0.00 0.00 0.00	0 0.00 0.00 0.00	215 2.08
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	32 0.31	1262 12.22	2043 19.79	4579 44.35	2396 23.21	12 0.12	10324 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 8 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.15 2.94 50.00	7 0.51 10.29 3.83	21 1.53 30.88 6.62	29 2.11 42.65 5.11	9 0.66 13.24 3.01	0 0.00 0.00 0.00	68 4.96
HSDG	1 0.07 0.09 25.00	150 10.93 12.91 81.97	235 17.13 20.22 74.13	486 35.42 41.82 85.71	290 21.14 24.96 96.99	0 0.00 0.00 0.00	1162 84.69
GED	0 0.00 0.00 0.00	16 1.17 19.05 8.74	30 2.19 35.71 9.46	36 2.62 42.86 6.35	0 0.00 0.00 0.00	2 0.15 2.38 100.00	84 6.12
NNHSG	1 0.07 1.72 25.00	10 0.73 17.24 5.46	31 2.26 53.45 9.78	16 1.17 27.59 2.82	0 0.00 0.00 0.00	0 0.00 0.00 0.00	58 4.23
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	4 0.29	183 13.34	317 23.10	567 41.33	299 21.79	2 0.15	1372 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 9 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	4 0.43 9.09 22.22	10 1.07 22.73 5.92	11 1.18 25.00 5.21	12 1.29 27.27 3.52	7 0.75 15.91 3.68	0 0.00 0.00 0.00	44 4.73
HSDG	12 1.29 1.53 66.67	131 14.07 16.75 77.51	161 17.29 20.59 76.30	293 31.47 37.47 85.92	183 19.66 23.40 96.32	2 0.21 0.26 100.00	782 84.00
GED	2 0.21 3.77 11.11	13 1.40 24.53 7.69	15 1.61 28.30 7.11	23 2.47 43.40 6.74	0 0.00 0.00 0.00	0 0.00 0.00 0.00	53 5.69
NNHSG	0 0.00 0.00 0.00	15 1.61 28.85 8.88	24 2.58 46.15 11.37	13 1.40 25.00 3.81	0 0.00 0.00 0.00	0 0.00 0.00 0.00	52 5.59
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	18 1.93	169 18.15	211 22.66	341 36.63	190 20.41	2 0.21	931 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 10 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 16.67 25.00 50.00	0 0.00 0.00 .	3 50.00 75.00 75.00	0 0.00 0.00 .	0 0.00 0.00 .	4 66.67
GED	0 0.00 0.00 .	1 16.67 50.00 50.00	0 0.00 0.00 .	1 16.67 50.00 25.00	0 0.00 0.00 .	0 0.00 0.00 .	2 33.33
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	2 33.33	0 0.00	4 66.67	0 0.00	0 0.00	6 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 11 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	136 0.40 27.36 13.19	310 0.92 62.37 2.58	35 0.10 7.04 0.36	15 0.04 3.02 0.18	1 0.00 0.20 0.04	0 0.00 0.00 0.00	497 1.47
HSDG	815 2.42 3.26 79.05	8989 26.64 35.99 74.90	6033 17.88 24.16 61.50	6685 19.82 26.77 79.45	2442 7.24 9.78 99.63	9 0.03 0.04 31.03	24973 74.02
GED	41 0.12 1.22 3.98	1133 3.36 33.80 9.44	1379 4.09 41.14 14.06	777 2.30 23.18 9.23	2 0.01 0.06 0.08	20 0.06 0.60 68.97	3352 9.94
NNHSG	39 0.12 0.79 3.78	1570 4.65 31.95 13.08	2362 7.00 48.07 24.08	937 2.78 19.07 11.14	6 0.02 0.12 0.24	0 0.00 0.00 0.00	4914 14.57
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00 100.00 0.01	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00
TOTAL	1031 3.06	12002 35.58	9810 29.08	8414 24.94	2451 7.27	29 0.09	33737 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 12 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3 0.04 1.58 10.71	81 1.00 42.63 7.45	57 0.71 30.00 3.22	44 0.54 23.16 1.34	5 0.06 2.63 0.26	0 0.00 0.00 0.00	190 2.35
HSDG	22 0.27 0.32 78.57	826 10.22 11.87 75.99	1303 16.12 18.72 73.66	2908 35.98 41.78 88.47	1897 23.47 27.25 99.63	5 0.06 0.07 62.50	6961 86.12
GED	2 0.02 0.48 7.14	75 0.93 17.81 6.90	176 2.18 41.81 9.95	163 2.02 38.72 4.96	2 0.02 0.48 0.11	3 0.04 0.71 37.50	421 5.21
NNHSG	1 0.01 0.20 3.57	105 1.30 20.55 9.66	233 2.88 45.60 13.17	172 2.13 33.66 5.23	0 0.00 0.00 0.00	0 0.00 0.00 0.00	511 6.32
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	28 0.35	1087 13.45	1769 21.89	3287 40.67	1904 23.56	8 0.10	8083 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 13 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	10 0.83 19.23 5.75	10 0.83 19.23 3.30	19 1.57 36.54 4.06	13 1.08 25.00 5.04	0 0.00 0.00 0.00	52 4.30
HSDG	3 0.25 0.31 60.00	125 10.34 12.98 71.84	199 16.46 20.66 65.68	391 32.34 40.60 83.55	245 20.26 25.44 94.96	0 0.00 0.00 0.00	963 79.65
GED	0 0.00 0.00 0.00	18 1.49 21.43 10.34	41 3.39 48.81 13.53	24 1.99 28.57 5.13	0 0.00 0.00 0.00	1 0.08 1.19 100.00	84 6.95
NNHSG	2 0.17 1.82 40.00	21 1.74 19.09 12.07	53 4.38 48.18 17.49	34 2.81 30.91 7.26	0 0.00 0.00 0.00	0 0.00 0.00 0.00	110 9.10
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	5 0.41	174 14.39	303 25.06	468 38.71	258 21.34	1 0.08	1209 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 14 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=OTHER

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2	10	12	10	4	0	38
	0.19	0.96	1.15	0.96	0.38	0.00	3.64
	5.26	26.32	31.58	26.32	10.53	0.00	
	14.29	4.24	4.69	2.78	2.25	.	
HSDG	11	175	172	304	174	0	836
	1.05	16.76	16.48	29.12	16.67	0.00	80.08
	1.32	20.93	20.57	36.36	20.81	0.00	
	78.57	74.15	67.19	84.44	97.75	.	
GED	0	19	34	20	0	0	73
	0.00	1.82	3.26	1.92	0.00	0.00	6.99
	0.00	26.03	46.58	27.40	0.00	0.00	
	0.00	8.05	13.28	5.56	0.00	.	
NNHSG	1	32	38	26	0	0	97
	0.10	3.07	3.64	2.49	0.00	0.00	9.29
	1.03	32.99	39.18	26.80	0.00	0.00	
	7.14	13.56	14.84	7.22	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	14	236	256	360	178	0	1044
	1.34	22.61	24.52	34.48	17.05	0.00	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 15 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=UNKNOWN

EDLVL / TSC44 (FREQUENCY, PERCENT, ROW PCT, COL PCT)		I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	FREQUENCY	0	0	0	0	0	0	0
	PERCENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ROW PCT	.	.	.	.	.	.	
	COL PCT	.	0.00	0.00	0.00	0.00	.	
HSDG	FREQUENCY	0	4	1	5	3	0	13
	PERCENT	0.00	28.57	7.14	35.71	21.43	0.00	92.86
	ROW PCT	0.00	30.77	7.69	38.46	23.08	0.00	
	COL PCT	.	100.00	50.00	100.00	100.00	.	
GED	FREQUENCY	0	0	1	0	0	0	1
	PERCENT	0.00	0.00	7.14	0.00	0.00	0.00	7.14
	ROW PCT	0.00	0.00	100.00	0.00	0.00	0.00	
	COL PCT	.	0.00	50.00	0.00	0.00	.	
NNHSG	FREQUENCY	0	0	0	0	0	0	0
	PERCENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ROW PCT	.	.	.	.	.	.	
	COL PCT	.	0.00	0.00	0.00	0.00	.	
UNKNOWN	FREQUENCY	0	0	0	0	0	0	0
	PERCENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ROW PCT	.	.	.	.	.	.	
	COL PCT	.	0.00	0.00	0.00	0.00	.	
TOTAL		0	4	2	5	3	0	14
		0.00	28.57	14.29	35.71	21.43	0.00	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 16 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	332	466	17	4	0	3	822
	4.11	5.76	0.21	0.05	0.00	0.04	10.17
	40.39	56.69	2.07	0.49	0.00	0.36	
	37.90	12.36	0.99	0.29	0.00	10.71	
HSDG	539	3008	1325	1188	296	16	6372
	6.67	37.21	16.39	14.70	3.66	0.20	78.82
	8.46	47.21	20.79	18.64	4.65	0.25	
	61.53	79.79	77.03	85.22	100.00	57.14	
GED	3	177	172	145	0	9	506
	0.04	2.19	2.13	1.79	0.00	0.11	6.26
	0.59	34.98	33.99	28.66	0.00	1.78	
	0.34	4.69	10.00	10.40	0.00	32.14	
NNHSG	2	119	206	57	0	0	384
	0.02	1.47	2.55	0.71	0.00	0.00	4.75
	0.52	30.99	53.65	14.84	0.00	0.00	
	0.23	3.16	11.98	4.09	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	876	3770	1720	1394	296	28	8084
	10.84	46.64	21.28	17.24	3.66	0.35	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 17 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	9 0.32 5.49 39.13	96 3.40 58.54 17.05	32 1.13 19.51 5.08	23 0.81 14.02 1.92	3 0.11 1.83 0.74	1 0.04 0.61 25.00	164 5.81
HSDG	14 0.50 0.56 60.87	429 15.20 17.12 76.20	544 19.27 21.71 86.35	1115 39.50 44.49 93.15	402 14.24 16.04 99.01	2 0.07 0.08 50.00	2506 88.77
GED	0 0.00 0.00 0.00	28 0.99 28.57 4.97	29 1.03 29.59 4.60	39 1.38 39.80 3.26	1 0.04 1.02 0.25	1 0.04 1.02 25.00	98 3.47
NNHSG	0 0.00 0.00 0.00	10 0.35 18.18 1.78	25 0.89 45.45 3.97	20 0.71 36.36 1.67	0 0.00 0.00 0.00	0 0.00 0.00 0.00	55 1.95
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	23 0.81	563 19.94	630 22.32	1197 42.40	406 14.38	4 0.14	2823 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 18 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.43 5.88 50.00	16 3.43 47.06 16.49	8 1.72 23.53 6.25	5 1.07 14.71 2.98	3 0.64 8.82 4.35	0 0.00 0.00 .	34 7.30
HSDG	2 0.43 0.53 50.00	68 14.59 17.99 70.10	94 20.17 24.87 73.44	148 31.76 39.15 88.10	66 14.16 17.46 95.65	0 0.00 0.00 .	378 81.12
GED	0 0.00 0.00 0.00	9 1.93 25.71 9.28	15 3.22 42.86 11.72	11 2.36 31.43 6.55	0 0.00 0.00 0.00	0 0.00 0.00 .	35 7.51
NNHSG	0 0.00 0.00 0.00	4 0.86 21.05 4.12	11 2.36 57.89 8.59	4 0.86 21.05 2.38	0 0.00 0.00 0.00	0 0.00 0.00 .	19 4.08
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	4 0.86	97 20.82	128 27.47	168 36.05	69 14.81	0 0.00	466 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 19 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	4 1.16 10.81 50.00	17 4.93 45.95 20.00	7 2.03 18.92 7.87	9 2.61 24.32 8.04	0 0.00 0.00 0.00	0 0.00 0.00 0.00	37 10.72
HSDG	4 1.16 1.52 50.00	60 17.39 22.81 70.59	66 19.13 25.10 74.16	82 23.77 31.18 73.21	50 14.49 19.01 100.00	1 0.29 0.38 100.00	263 76.23
GED	0 0.00 0.00 0.00	3 0.87 13.64 3.53	10 2.90 45.45 11.24	9 2.61 40.91 8.04	0 0.00 0.00 0.00	0 0.00 0.00 0.00	22 6.38
NNHSG	0 0.00 0.00 0.00	5 1.45 21.74 5.88	6 1.74 26.09 6.74	12 3.48 52.17 10.71	0 0.00 0.00 0.00	0 0.00 0.00 0.00	23 6.67
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	8 2.32	85 24.64	89 25.80	112 32.46	50 14.49	1 0.29	345 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 20 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 25.00 100.00 100.00	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	1 25.00
HSDG	0 0.00 0.00 0.00	2 50.00 66.67 100.00	0 0.00 0.00 .	0 0.00 0.00 .	1 25.00 33.33 100.00	0 0.00 0.00 .	3 75.00
GED	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	1 25.00	2 50.00	0 0.00	0 0.00	1 25.00	0 0.00	4 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 21 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=WHITE

EDLVL / TSC44 (FREQUENCY, PERCENT, ROW PCT, COL PCT)	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	6 0.63 22.22 12.77	20 2.11 74.07 5.13	0 0.00 0.00 0.00	1 0.11 3.70 0.52	0 0.00 0.00 0.00	0 0.00 0.00 0.00	27 2.84
HSDG	38 4.00 5.20 80.85	314 33.05 42.95 80.51	177 18.63 24.21 65.80	152 16.00 20.79 78.35	46 4.84 6.29 100.00	4 0.42 0.55 100.00	731 76.95
GED	0 0.00 0.00 0.00	28 2.95 31.46 7.18	40 4.21 44.94 14.87	21 2.21 23.60 10.82	0 0.00 0.00 0.00	0 0.00 0.00 0.00	89 9.37
NNHSG	3 0.32 2.91 6.38	28 2.95 27.18 7.18	52 5.47 50.49 19.33	20 2.11 19.42 10.31	0 0.00 0.00 0.00	0 0.00 0.00 0.00	103 10.84
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	47 4.95	390 41.05	269 28.32	194 20.42	46 4.84	4 0.42	950 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 22 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	6 2.29 85.71 12.24	1 0.38 14.29 1.79	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	7 2.67
HSDG	3 1.15 1.27 100.00	40 15.27 16.95 81.63	46 17.56 19.49 82.14	89 33.97 37.71 92.71	58 22.14 24.58 100.00	0 0.00 0.00 .	236 90.08
GED	0 0.00 0.00 0.00	2 0.76 20.00 4.08	3 1.15 30.00 5.36	5 1.91 50.00 5.21	0 0.00 0.00 0.00	0 0.00 0.00 .	10 3.82
NNHSG	0 0.00 0.00 0.00	1 0.38 11.11 2.04	6 2.29 66.67 10.71	2 0.76 22.22 2.08	0 0.00 0.00 0.00	0 0.00 0.00 .	9 3.44
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	3 1.15	49 18.70	56 21.37	96 36.64	58 22.14	0 0.00	262 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 23 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 4.00 100.00 8.70	0 0.00 0.00 0.00	0 0.00 0.00 .	2 4.00
HSDG	0 0.00 0.00 .	10 20.00 22.73 90.91	9 18.00 20.45 75.00	21 42.00 47.73 91.30	4 8.00 9.09 100.00	0 0.00 0.00 .	44 88.00
GED	0 0.00 0.00 .	1 2.00 50.00 9.09	1 2.00 50.00 8.33	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	2 4.00
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	2 4.00 100.00 16.67	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	2 4.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	11 22.00	12 24.00	23 46.00	4 8.00	0 0.00	50 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 24 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=OTHER

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 2.70 25.00 50.00	1 2.70 25.00 12.50	1 2.70 25.00 10.00	1 2.70 25.00 7.14	0 0.00 0.00 0.00	0 0.00 0.00 .	4 10.81
HSDG	1 2.70 3.57 50.00	6 16.22 21.43 75.00	7 18.92 25.00 70.00	11 29.73 39.29 78.57	3 8.11 10.71 100.00	0 0.00 0.00 .	28 75.68
GED	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 5.41 100.00 14.29	0 0.00 0.00 0.00	0 0.00 0.00 .	2 5.41
NNHSG	0 0.00 0.00 0.00	1 2.70 33.33 12.50	2 5.41 66.67 20.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	3 8.11
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	2 5.41	8 21.62	10 27.03	14 37.84	3 8.11	0 0.00	37 100.00

EDLVL TSC44

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 25 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 1 OF SPSTT BY TSC44
CONTROLLING FOR PS=NPS

SPSTT TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	2205 1.67 4.11 47.74	19523 14.77 36.43 44.69	12756 9.65 23.80 38.75	12914 9.77 24.10 36.79	6189 4.68 11.55 39.08	1 0.00 0.00 16.67	53588 40.55
REUP	636 0.48 2.42 13.77	7321 5.54 27.91 16.76	6138 4.64 23.40 18.64	8197 6.20 31.25 23.35	3933 2.98 15.00 24.84	3 0.00 0.01 50.00	26228 19.84
ATTRIT	996 0.75 2.41 21.56	12722 9.63 30.77 29.12	11494 8.70 27.80 34.91	11349 8.59 27.45 32.33	4786 3.62 11.57 30.22	2 0.00 0.00 33.33	41349 31.29
STILL IN	735 0.56 7.48 15.91	3700 2.80 37.65 8.47	2213 1.67 22.52 6.72	2358 1.78 23.99 6.72	822 0.62 8.36 5.19	0 0.00 0.00 0.00	9828 7.44
BAD DATA	47 0.04 4.00 1.02	419 0.32 35.66 0.96	321 0.24 27.32 0.98	282 0.21 24.00 0.80	106 0.08 9.02 0.67	0 0.00 0.00 0.00	1175 0.89
TOTAL	4619 3.49	43685 33.05	32922 24.91	35100 26.56	15836 11.98	6 0.00	132168 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 2 OF SPSTT BY TSC44
CONTROLLING FOR PS=PS

SPSTT TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	144	1189	729	1324	4	48	3438
	1.14	9.41	5.77	10.48	0.03	0.38	27.21
	4.19	34.58	21.20	38.51	0.12	1.40	
	23.57	27.04	26.67	28.19	16.00	27.91	
REUP	203	1571	978	1630	8	51	4441
	1.61	12.43	7.74	12.90	0.06	0.40	35.15
	4.57	35.37	22.02	36.70	0.18	1.15	
	33.22	35.73	35.78	34.70	32.00	29.65	
ATTRIT	82	781	646	1185	8	36	2738
	0.65	6.18	5.11	9.38	0.06	0.28	21.67
	2.99	28.52	23.59	43.28	0.29	1.31	
	13.42	17.76	23.64	25.23	32.00	20.93	
STILL IN	177	817	354	513	0	33	1894
	1.40	6.47	2.80	4.06	0.00	0.26	14.99
	9.35	43.14	18.69	27.09	0.00	1.74	
	28.97	18.58	12.95	10.92	0.00	19.19	
BAD DATA	5	39	26	45	5	4	124
	0.04	0.31	0.21	0.36	0.04	0.03	0.98
	4.03	31.45	20.97	36.29	4.03	3.23	
	0.82	0.89	0.95	0.96	20.00	2.33	
TOTAL	611	4397	2733	4697	25	172	12635
	4.84	34.80	21.63	37.17	0.20	1.36	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 1 OF SPSTT BY MC44
CONTROLLING FOR PS=NPS

SPSTT MC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	34484	12914	6189	1	53588
	26.09	9.77	4.68	0.00	40.55
	64.35	24.10	11.55	0.00	
	42.45	36.79	39.08	16.67	
REUP	14095	8197	3933	3	26228
	10.66	6.20	2.98	0.00	19.84
	53.74	31.25	15.00	0.01	
	17.35	23.35	24.84	50.00	
ATTRIT	25212	11349	4786	2	41349
	19.08	8.59	3.62	0.00	31.29
	60.97	27.45	11.57	0.00	
	31.04	32.33	30.22	33.33	
STILL IN	6648	2358	822	0	9828
	5.03	1.78	0.62	0.00	7.44
	67.64	23.99	8.36	0.00	
	8.18	6.72	5.19	0.00	
BAD DATA	787	282	106	0	1175
	0.60	0.21	0.08	0.00	0.89
	66.98	24.00	9.02	0.00	
	0.97	0.80	0.67	0.00	
TOTAL	81226	35100	15836	6	132168
	61.46	26.56	11.98	0.00	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 2 OF SPSTT BY MC44
CONTROLLING FOR PS=PS

SPSTT MC44

FREQUENCY PERCENT ROW PCT COL PCT	I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	2062 16.32 59.98 26.64	1324 10.48 38.51 28.19	4 0.03 0.12 16.00	48 0.38 1.40 27.91	3438 27.21
REUP	2752 21.78 61.97 35.55	1630 12.90 36.70 34.70	8 0.06 0.18 32.00	51 0.40 1.15 29.65	4441 35.15
ATTRIT	1509 11.94 55.11 19.49	1185 9.38 43.28 25.23	8 0.06 0.29 32.00	36 0.28 1.31 20.93	2738 21.67
STILL IN	1348 10.67 71.17 17.41	513 4.06 27.09 10.92	0 0.00 0.00 0.00	33 0.26 1.74 19.19	1894 14.99
BAD DATA	70 0.55 56.45 0.90	45 0.36 36.29 0.96	5 0.04 4.03 20.00	4 0.03 3.23 2.33	124 0.98
TOTAL	7741 61.27	4697 37.17	25 0.20	172 1.36	12635 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 1 OF SPSTT BY EDLVL
CONTROLLING FOR PS=NPS

SPSTT EDLVL

FREQUENCY / PERCENT / ROW PCT / COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	1296	47697	1701	2893	1	53588
	0.98	36.09	1.29	2.19	0.00	40.55
	2.42	89.01	3.17	5.40	0.00	
	37.32	42.47	29.59	27.22	50.00	
REUP	578	23224	917	1509	0	26228
	0.44	17.57	0.69	1.14	0.00	19.84
	2.20	88.55	3.50	5.75	0.00	
	16.64	20.68	15.95	14.20	0.00	
ATTRIT	710	32237	2771	5630	1	41349
	0.54	24.39	2.10	4.26	0.00	31.29
	1.72	77.96	6.70	13.62	0.00	
	20.44	28.70	48.20	52.96	50.00	
STILL IN	852	8199	296	481	0	9828
	0.64	6.20	0.22	0.36	0.00	7.44
	8.67	83.42	3.01	4.89	0.00	
	24.53	7.30	5.15	4.52	0.00	
BAD DATA	37	957	64	117	0	1175
	0.03	0.72	0.05	0.09	0.00	0.89
	3.15	81.45	5.45	9.96	0.00	
	1.07	0.85	1.11	1.10	0.00	
TOTAL	3473	112314	5749	10630	2	132168
	2.63	84.98	4.35	8.04	0.00	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 2 OF SPSTT BY EDLVL
CONTROLLING FOR PS=PS

SPSTT EDLVL

FREQUENCY / PERCENT / ROW PCT / COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	102	2283	1050	3	0	3438
	0.81	18.07	8.31	0.02	0.00	27.21
	2.97	66.40	30.54	0.09	0.00	
	19.14	27.31	28.14	33.33	.	
REUP	155	3164	1118	4	0	4441
	1.23	25.04	8.85	0.03	0.00	35.15
	3.49	71.25	25.17	0.09	0.00	
	29.08	37.84	29.96	44.44	.	
ATTRIT	67	1509	1160	2	0	2738
	0.53	11.94	9.18	0.02	0.00	21.67
	2.45	55.11	42.37	0.07	0.00	
	12.57	18.05	31.08	22.22	.	
STILL IN	206	1323	365	0	0	1894
	1.63	10.47	2.89	0.00	0.00	14.99
	10.88	69.85	19.27	0.00	0.00	
	38.65	15.82	9.78	0.00	.	
BAD DATA	3	82	39	0	0	124
	0.02	0.65	0.31	0.00	0.00	0.98
	2.42	66.13	31.45	0.00	0.00	
	0.56	0.98	1.05	0.00	.	
TOTAL	533	8361	3732	9	0	12635
	4.22	66.17	29.54	0.07	0.00	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 1 OF SPSTT BY HSGRAD
CONTROLLING FOR PS=NPS

SPSTT HSGRAD

FREQUENCY / PERCENT / ROW PCT / COL PCT	HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	48993 37.07 91.43 42.31	4594 3.48 8.57 28.05	1 0.00 0.00 50.00	53588 40.55
REUP	23802 18.01 90.75 20.56	2426 1.84 9.25 14.81	0 0.00 0.00 0.00	26228 19.84
ATTRIT	32947 24.93 79.68 28.45	8401 6.36 20.32 51.29	1 0.00 0.00 50.00	41349 31.29
STILL IN	9051 6.85 92.09 7.82	777 0.59 7.91 4.74	0 0.00 0.00 0.00	9828 7.44
BAD DATA	994 0.75 84.60 0.86	181 0.14 15.40 1.11	0 0.00 0.00 0.00	1175 0.89
TOTAL	115787 87.61	16379 12.39	2 0.00	132168 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 2 OF SPSTT BY HSGRAD
CONTROLLING FOR PS=PS

SPSTT HSGRAD

FREQUENCY PERCENT ROW PCT COL PCT	HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	2385 18.88 69.37 26.82	1053 8.33 30.63 28.15	0 0.00 0.00 .	3438 27.21
REUP	3319 26.27 74.74 37.32	1122 8.88 25.26 29.99	0 0.00 0.00 .	4441 35.15
ATTRIT	1576 12.47 57.56 17.72	1162 9.20 42.44 31.06	0 0.00 0.00 .	2738 21.67
STILL IN	1529 12.10 80.73 17.19	365 2.89 19.27 9.76	0 0.00 0.00 .	1894 14.99
BAD DATA	85 0.67 68.55 0.96	39 0.31 31.45 1.04	0 0.00 0.00 .	124 0.98
TOTAL	8894 70.39	3741 29.61	0 0.00	12635 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 1 OF SPSTT BY RETHGP
CONTROLLING FOR PS=NPS

SPSTT RETHGP

FREQUENCY PERCENT ROW PCT COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	40654 30.76 75.86 42.88	9452 7.15 17.64 32.66	1911 1.45 3.57 41.03	1554 1.18 2.90 41.89	17 0.01 0.03 43.59	53588 40.55
REUP	15003 11.35 57.20 15.82	9224 6.98 35.17 31.87	1177 0.89 4.49 25.27	820 0.62 3.13 22.10	4 0.00 0.02 10.26	26228 19.84
ATTRIT	31625 23.93 76.48 33.35	7570 5.73 18.31 26.15	1146 0.87 2.77 24.60	994 0.75 2.40 26.79	14 0.01 0.03 35.90	41349 31.29
STILL IN	6679 5.05 67.96 7.04	2459 1.86 25.02 8.50	378 0.29 3.85 8.12	308 0.23 3.13 8.30	4 0.00 0.04 10.26	9828 7.44
BAD DATA	855 0.65 72.77 0.90	240 0.18 20.43 0.83	46 0.03 3.91 0.99	34 0.03 2.89 0.92	0 0.00 0.00 0.00	1175 0.89
TOTAL	94816 71.74	28945 21.90	4658 3.52	3710 2.81	39 0.03	132168 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 2 OF SPSTT BY RETHGP
CONTROLLING FOR PS=PS

SPSTT / RETHGP FREQUENCY PERCENT ROW PCT COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	2563 20.28 74.55 27.83	681 5.39 19.81 25.41	106 0.84 3.08 23.25	87 0.69 2.53 30.21	1 0.01 0.03 33.33	3438 27.21
REUP	3033 24.00 68.30 32.94	1100 8.71 24.77 41.04	195 1.54 4.39 42.76	111 0.88 2.50 38.54	2 0.02 0.05 66.67	4441 35.15
ATTRIT	2112 16.72 77.14 22.94	513 4.06 18.74 19.14	63 0.50 2.30 13.82	50 0.40 1.83 17.36	0 0.00 0.00 0.00	2738 21.67
STILL IN	1405 11.12 74.18 15.26	364 2.88 19.22 13.58	88 0.70 4.65 19.30	37 0.29 1.95 12.85	0 0.00 0.00 0.00	1894 14.99
BAD DATA	95 0.75 76.61 1.03	22 0.17 17.74 0.82	4 0.03 3.23 0.88	3 0.02 2.42 1.04	0 0.00 0.00 0.00	124 0.98
TOTAL	9208 72.88	2680 21.21	456 3.61	288 2.28	3 0.02	12635 100.00

THIS IS FOR FISCAL YEAR 1983

TABLE 1 OF SPSTT BY SEX
CONTROLLING FOR PS=NPS

SPSTT SEX

FREQUENCY PERCENT ROW PCT COL PCT	MALE	FEMALE	TOTAL
ETS	48578 36.75 90.65 42.01	5010 3.79 9.35 30.31	53588 40.55
REUP	22959 17.37 87.54 19.85	3269 2.47 12.46 19.78	26228 19.84
ATTRIT	34692 26.25 83.90 30.00	6657 5.04 16.10 40.27	41349 31.29
STILL IN	8405 6.36 85.52 7.27	1423 1.08 14.48 8.61	9828 7.44
BAD DATA	1005 0.76 85.53 0.87	170 0.13 14.47 1.03	1175 0.89
TOTAL	115639 87.49	16529 12.51	132168 100.00

THIS IS FOR FISCAL YEAR 1983

TABLE 2 OF SPSTT BY SEX
CONTROLLING FOR PS=PS

SPSTT / FREQUENCY, PERCENT, ROW PCT, COL PCT	SEX: MALE	FEMALE	TOTAL
ETS	3054 24.17 88.83 26.99	384 3.04 11.17 29.07	3438 27.21
REUP	4051 32.06 91.22 35.81	390 3.09 8.78 29.52	4441 35.15
ATTRIT	2375 18.80 86.74 20.99	363 2.87 13.26 27.48	2738 21.67
STILL IN	1728 13.68 91.24 15.27	166 1.31 8.76 12.57	1894 14.99
BAD DATA	106 0.84 85.48 0.94	18 0.14 14.52 1.36	124 0.98
TOTAL	11314 89.54	1321 10.46	12635 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	270 0.66 33.09 12.72	486 1.20 59.56 2.77	48 0.12 5.88 0.48	10 0.02 1.23 0.12	2 0.00 0.25 0.07	0 0.00 0.00 .	816 2.01
HSDG	1809 4.45 5.04 85.21	15504 38.14 43.24 88.38	8234 20.25 22.96 81.59	7628 18.76 21.27 92.95	2684 6.60 7.48 99.81	0 0.00 0.00 .	35859 88.21
GED	26 0.06 1.77 1.22	650 1.60 44.37 3.71	642 1.58 43.82 6.36	146 0.36 9.97 1.78	1 0.00 0.07 0.04	0 0.00 0.00 .	1465 3.60
NNHSG	18 0.04 0.72 0.85	903 2.22 35.93 5.15	1167 2.87 46.44 11.56	423 1.04 16.83 5.15	2 0.00 0.08 0.07	0 0.00 0.00 .	2513 6.18
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00 100.00 0.01	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 0.00
TOTAL	2123 5.22	17543 43.15	10092 24.82	8207 20.19	2689 6.61	0 0.00	40654 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	6	135	96	66	16	0	319
	0.06	1.43	1.02	0.70	0.17	0.00	3.37
	1.88	42.32	30.09	20.69	5.02	0.00	
	16.67	10.93	5.17	1.85	0.58	0.00	
HSDG	28	1025	1600	3394	2737	1	8785
	0.30	10.84	16.93	35.91	28.96	0.01	92.94
	0.32	11.67	18.21	38.63	31.16	0.01	
	77.78	83.00	86.21	95.10	99.35	100.00	
GED	2	34	71	37	1	0	145
	0.02	0.36	0.75	0.39	0.01	0.00	1.53
	1.38	23.45	48.97	25.52	0.69	0.00	
	5.56	2.75	3.83	1.04	0.04	0.00	
NNHSG	0	41	89	72	1	0	203
	0.00	0.43	0.94	0.76	0.01	0.00	2.15
	0.00	20.20	43.84	35.47	0.49	0.00	
	0.00	3.32	4.80	2.02	0.04	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	36	1235	1856	3569	2755	1	9452
	0.38	13.07	19.64	37.76	29.15	0.01	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.05 1.27 11.11	23 1.20 29.11 6.78	21 1.10 26.58 4.76	22 1.15 27.85 3.22	12 0.63 15.19 2.74	0 0.00 0.00 .	79 4.13
HSDG	8 0.42 0.47 88.89	287 15.02 17.00 84.66	342 17.90 20.26 77.55	625 32.71 37.03 91.37	426 22.29 25.24 97.26	0 0.00 0.00 .	1688 88.33
GED	0 0.00 0.00 0.00	10 0.52 22.73 2.95	26 1.36 59.09 5.90	8 0.42 18.18 1.17	0 0.00 0.00 0.00	0 0.00 0.00 .	44 2.30
NNHSG	0 0.00 0.00 0.00	19 0.99 19.00 5.60	52 2.72 52.00 11.79	29 1.52 29.00 4.24	0 0.00 0.00 0.00	0 0.00 0.00 .	100 5.23
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	9 0.47	339 17.74	441 23.08	684 35.79	438 22.92	0 0.00	1911 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	6 0.39 7.32 17.14	35 2.25 42.68 8.71	26 1.67 31.71 7.14	12 0.77 14.63 2.67	3 0.19 3.66 0.99	0 0.00 0.00 .	82 5.28
HSDG	29 1.87 2.15 82.86	336 21.62 24.93 83.58	284 18.28 21.07 78.02	400 25.74 29.67 88.89	299 19.24 22.18 98.68	0 0.00 0.00 .	1348 86.74
GED	0 0.00 0.00 0.00	16 1.03 34.04 3.98	20 1.29 42.55 5.49	11 0.71 23.40 2.44	0 0.00 0.00 0.00	0 0.00 0.00 .	47 3.02
NNHSG	0 0.00 0.00 0.00	15 0.97 19.48 3.73	34 2.19 44.16 9.34	27 1.74 35.06 6.00	1 0.06 1.30 0.33	0 0.00 0.00 .	77 4.95
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	35 2.25	402 25.87	364 23.42	450 28.96	303 19.50	0 0.00	1554 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	2 11.76 11.76 100.00	4 23.53 23.53 100.00	3 17.65 17.65 100.00	4 23.53 23.53 100.00	4 23.53 23.53 100.00	0 0.00 0.00 .	17 100.00
GED	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	2 11.76	4 23.53	3 17.65	4 23.53	4 23.53	0 0.00	17 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 6 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	89 0.59 32.13 14.88	165 1.10 59.57 2.77	17 0.11 6.14 0.44	4 0.03 1.44 0.11	2 0.01 0.72 0.19	0 0.00 0.00 0.00	277 1.85
HSDG	479 3.19 3.74 80.10	5061 33.73 39.48 84.84	2980 19.86 23.24 76.71	3247 21.64 25.33 92.77	1050 7.00 8.19 99.81	3 0.02 0.02 100.00	12820 85.45
GED	15 0.10 2.08 2.51	304 2.03 42.11 5.10	341 2.27 47.23 8.78	62 0.41 8.59 1.77	0 0.00 0.00 0.00	0 0.00 0.00 0.00	722 4.81
NNHSG	15 0.10 1.27 2.51	435 2.90 36.74 7.29	547 3.65 46.20 14.08	187 1.25 15.79 5.34	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1184 7.89
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	598 3.99	5965 39.76	3885 25.89	3500 23.33	1052 7.01	3 0.02	15003 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 7 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=BLACK

EDLVL / TSC44 FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	5 0.05 2.48 21.74	73 0.79 36.14 6.83	59 0.64 29.21 3.29	50 0.54 24.75 1.27	15 0.16 7.43 0.63	0 0.00 0.00 .	202 2.19
HSDG	18 0.20 0.21 78.26	935 10.14 10.78 87.46	1550 16.80 17.87 86.50	3797 41.16 43.77 96.18	2374 25.74 27.37 99.25	0 0.00 0.00 .	8674 94.04
GED	0 0.00 0.00 0.00	30 0.33 22.56 2.81	78 0.85 58.65 4.35	22 0.24 16.54 0.56	3 0.03 2.26 0.13	0 0.00 0.00 .	133 1.44
NNHSG	0 0.00 0.00 0.00	31 0.34 14.42 2.90	105 1.14 48.84 5.86	79 0.86 36.74 2.00	0 0.00 0.00 0.00	0 0.00 0.00 .	215 2.33
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	23 0.25	1069 11.59	1792 19.43	3948 42.80	2392 25.93	0 0.00	9224 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 8 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	7 0.59 11.86 4.79	20 1.70 33.90 7.55	23 1.95 38.98 4.95	9 0.76 15.25 3.01	0 0.00 0.00 .	59 5.01
HSDG	1 0.08 0.10 50.00	120 10.20 11.75 82.19	194 16.48 19.00 73.21	416 35.34 40.74 89.46	290 24.64 28.40 96.99	0 0.00 0.00 .	1021 86.75
GED	0 0.00 0.00 0.00	9 0.76 23.08 6.16	20 1.70 51.28 7.55	10 0.85 25.64 2.15	0 0.00 0.00 0.00	0 0.00 0.00 .	39 3.31
NNHSG	1 0.08 1.72 50.00	10 0.85 17.24 6.85	31 2.63 53.45 11.70	16 1.36 27.59 3.44	0 0.00 0.00 0.00	0 0.00 0.00 .	58 4.93
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	2 0.17	146 12.40	265 22.51	465 39.51	299 25.40	0 0.00	1177 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 9 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3 0.37 7.50 23.08	7 0.85 17.50 5.00	11 1.34 27.50 5.61	12 1.46 30.00 4.27	7 0.85 17.50 3.68	0 0.00 0.00 .	40 4.88
HSDG	10 1.22 1.42 76.92	112 13.66 15.89 80.00	150 18.29 21.28 76.53	250 30.49 35.46 88.97	183 22.32 25.96 96.32	0 0.00 0.00 .	705 85.98
GED	0 0.00 0.00 0.00	6 0.73 26.09 4.29	11 1.34 47.83 5.61	6 0.73 26.09 2.14	0 0.00 0.00 0.00	0 0.00 0.00 .	23 2.80
NNHSG	0 0.00 0.00 0.00	15 1.83 28.85 10.71	24 2.93 46.15 12.24	13 1.59 25.00 4.63	0 0.00 0.00 0.00	0 0.00 0.00 .	52 6.34
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	13 1.59	140 17.07	196 23.90	281 34.27	190 23.17	0 0.00	820 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 10 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 25.00 25.00 100.00	0 0.00 0.00 .	3 75.00 75.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	4 100.00
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 25.00	0 0.00	3 75.00	0 0.00	0 0.00	4 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 11 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	123 0.39 27.89 12.93	272 0.86 61.68 2.41	33 0.10 7.48 0.35	12 0.04 2.72 0.16	1 0.00 0.23 0.04	0 0.00 0.00 .	441 1.39
HSDG	751 2.37 3.14 78.97	8526 26.96 35.70 75.39	5784 18.29 24.22 62.06	6386 20.19 26.74 84.02	2437 7.71 10.20 99.71	0 0.00 0.00 .	23884 75.52
GED	38 0.12 1.59 4.00	941 2.98 39.42 8.32	1140 3.60 47.76 12.23	268 0.85 11.23 3.53	0 0.00 0.00 0.00	0 0.00 0.00 .	2387 7.55
NNHSG	39 0.12 0.79 4.10	1570 4.96 31.96 13.88	2362 7.47 48.09 25.34	935 2.96 19.04 12.30	6 0.02 0.12 0.25	0 0.00 0.00 .	4912 15.53
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00 100.00 0.01	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 0.00
TOTAL	951 3.01	11309 35.76	9320 29.47	7601 24.03	2444 7.73	0 0.00	31625 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 12 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=BLACK

EDLVL	FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	FREQUENCY	3	78	54	43	5	0	183
	PERCENT	0.04	1.03	0.71	0.57	0.07	0.00	2.42
	ROW PCT	1.64	42.62	29.51	23.50	2.73	0.00	
	COL PCT	11.54	7.67	3.28	1.44	0.26	0.00	
HSDG	FREQUENCY	20	770	1212	2708	1896	1	6607
	PERCENT	0.26	10.17	16.01	35.77	25.05	0.01	87.28
	ROW PCT	0.30	11.65	18.34	40.99	28.70	0.02	
	COL PCT	76.92	75.71	73.72	90.93	99.63	50.00	
GED	FREQUENCY	2	64	145	55	2	1	269
	PERCENT	0.03	0.85	1.92	0.73	0.03	0.01	3.55
	ROW PCT	0.74	23.79	53.90	20.45	0.74	0.37	
	COL PCT	7.69	6.29	8.82	1.85	0.11	50.00	
NNHSG	FREQUENCY	1	105	233	172	0	0	511
	PERCENT	0.01	1.39	3.08	2.27	0.00	0.00	6.75
	ROW PCT	0.20	20.55	45.60	33.66	0.00	0.00	
	COL PCT	3.85	10.32	14.17	5.78	0.00	0.00	
UNKNOWN	FREQUENCY	0	0	0	0	0	0	0
	PERCENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ROW PCT	.	.	.	.	.	.	
	COL PCT	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL		26	1017	1644	2978	1903	2	7570
		0.34	13.43	21.72	39.34	25.14	0.03	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 13 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	9 0.79 18.75 5.39	9 0.79 18.75 3.14	17 1.48 35.42 3.96	13 1.13 27.08 5.04	0 0.00 0.00 .	48 4.19
HSDG	3 0.26 0.32 60.00	120 10.47 12.94 71.86	191 16.67 20.60 66.55	368 32.11 39.70 85.78	245 21.38 26.43 94.96	0 0.00 0.00 .	927 80.89
GED	0 0.00 0.00 0.00	17 1.48 27.87 10.18	34 2.97 55.74 11.85	10 0.87 16.39 2.33	0 0.00 0.00 0.00	0 0.00 0.00 .	61 5.32
NNHSG	2 0.17 1.82 40.00	21 1.83 19.09 12.57	53 4.62 48.18 18.47	34 2.97 30.91 7.93	0 0.00 0.00 0.00	0 0.00 0.00 .	110 9.60
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	5 0.44	167 14.57	287 25.04	429 37.43	258 22.51	0 0.00	1146 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 14 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.20 5.26 14.29	10 1.01 26.32 4.44	12 1.21 31.58 4.98	10 1.01 26.32 2.98	4 0.40 10.53 2.25	0 0.00 0.00 .	38 3.82
HSDG	11 1.11 1.36 78.57	165 16.60 20.47 73.33	166 16.70 20.60 68.88	290 29.18 35.98 86.31	174 17.51 21.59 97.75	0 0.00 0.00 .	806 81.09
GED	0 0.00 0.00 0.00	18 1.81 33.96 8.00	25 2.52 47.17 10.37	10 1.01 18.87 2.98	0 0.00 0.00 0.00	0 0.00 0.00 .	53 5.33
NNHSG	1 0.10 1.03 7.14	32 3.22 32.99 14.22	38 3.82 39.18 15.77	26 2.62 26.80 7.74	0 0.00 0.00 0.00	0 0.00 0.00 .	97 9.76
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	14 1.41	225 22.64	241 24.25	336 33.80	178 17.91	0 0.00	994 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 15 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	4 28.57 30.77 100.00	1 7.14 7.69 50.00	5 35.71 38.46 100.00	3 21.43 23.08 100.00	0 0.00 0.00 .	13 92.86
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	1 7.14 100.00 50.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 7.14
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	4 28.57	2 14.29	5 35.71	3 21.43	0 0.00	14 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 16 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	268 4.01 41.42 38.07	363 5.43 56.11 11.80	14 0.21 2.16 0.94	2 0.03 0.31 0.18	0 0.00 0.00 0.00	0 0.00 0.00 .	647 9.69
HSDG	434 6.50 8.01 61.65	2504 37.49 46.20 81.40	1154 17.28 21.29 77.71	1032 15.45 19.04 92.31	296 4.43 5.46 100.00	0 0.00 0.00 .	5420 81.15
GED	0 0.00 0.00 0.00	90 1.35 39.47 2.93	111 1.66 48.68 7.47	27 0.40 11.84 2.42	0 0.00 0.00 0.00	0 0.00 0.00 .	228 3.41
NNHSG	2 0.03 0.52 0.28	119 1.78 30.99 3.87	206 3.08 53.65 13.87	57 0.85 14.84 5.10	0 0.00 0.00 0.00	0 0.00 0.00 .	384 5.75
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	704 10.54	3076 46.05	1485 22.23	1118 16.74	296 4.43	0 0.00	6679 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 17 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	9	86	30	20	3	0	148
	0.37	3.50	1.22	0.81	0.12	0.00	6.02
	6.08	58.11	20.27	13.51	2.03	0.00	
	47.37	17.92	5.51	1.98	0.74	.	
HSDG	10	370	471	960	402	0	2213
	0.41	15.05	19.15	39.04	16.35	0.00	90.00
	0.45	16.72	21.28	43.38	18.17	0.00	
	52.63	77.08	86.58	95.05	99.01	.	
GED	0	14	18	10	1	0	43
	0.00	0.57	0.73	0.41	0.04	0.00	1.75
	0.00	32.56	41.86	23.26	2.33	0.00	
	0.00	2.92	3.31	0.99	0.25	.	
NNHSG	0	10	25	20	0	0	55
	0.00	0.41	1.02	0.81	0.00	0.00	2.24
	0.00	18.18	45.45	36.36	0.00	0.00	
	0.00	2.08	4.60	1.98	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	19	480	544	1010	406	0	2459
	0.77	19.52	22.12	41.07	16.51	0.00	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 18 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.53 7.14 50.00	11 2.91 39.29 16.18	7 1.85 25.00 6.80	5 1.32 17.86 3.73	3 0.79 10.71 4.35	0 0.00 0.00 .	28 7.41
HSDG	2 0.53 0.63 50.00	50 13.23 15.72 73.53	78 20.63 24.53 75.73	122 32.28 38.36 91.04	66 17.46 20.75 95.65	0 0.00 0.00 .	318 84.13
GED	0 0.00 0.00 0.00	3 0.79 23.08 4.41	7 1.85 53.85 6.80	3 0.79 23.08 2.24	0 0.00 0.00 0.00	0 0.00 0.00 .	13 3.44
NNHSG	0 0.00 0.00 0.00	4 1.06 21.05 5.88	11 2.91 57.89 10.68	4 1.06 21.05 2.99	0 0.00 0.00 0.00	0 0.00 0.00 .	19 5.03
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	4 1.06	68 17.99	103 27.25	134 35.45	69 18.25	0 0.00	378 100.00

THIS IS FOR FISCAL YEAR 1983

TABLE 19 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=OTHER

EDLVL / TSC44 — FREQUENCY, PERCENT, ROW PCT, COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3	13	7	5	0	0	28
	0.97	4.22	2.27	1.62	0.00	0.00	9.09
	10.71	46.43	25.00	17.86	0.00	0.00	
	42.86	17.57	8.64	5.21	0.00	.	
HSDG	4	55	60	76	50	0	245
	1.30	17.86	19.48	24.68	16.23	0.00	79.55
	1.63	22.45	24.49	31.02	20.41	0.00	
	57.14	74.32	74.07	79.17	100.00	.	
GED	0	1	8	3	0	0	12
	0.00	0.32	2.60	0.97	0.00	0.00	3.90
	0.00	8.33	66.67	25.00	0.00	0.00	
	0.00	1.35	9.88	3.13	0.00	.	
NNHSG	0	5	6	12	0	0	23
	0.00	1.62	1.95	3.90	0.00	0.00	7.47
	0.00	21.74	26.09	52.17	0.00	0.00	
	0.00	6.76	7.41	12.50	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	7	74	81	96	50	0	308
	2.27	24.03	26.30	31.17	16.23	0.00	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 20 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 25.00 100.00 100.00	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 .	1 25.00
HSDG	0 0.00 0.00 0.00	2 50.00 66.67 100.00	0 0.00 0.00 .	0 0.00 0.00 .	1 25.00 33.33 100.00	0 0.00 0.00 .	3 75.00
GED	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	1 25.00	2 50.00	0 0.00	0 0.00	1 25.00	0 0.00	4 100.00

THIS IS FOR FISCAL YEAR 1983

TABLE 21 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	5 0.58 20.00 11.90	19 2.22 76.00 5.34	0 0.00 0.00 0.00	1 0.12 4.00 0.61	0 0.00 0.00 0.00	0 0.00 0.00 .	25 2.92
HSDG	34 3.98 5.08 80.95	288 33.68 43.05 80.90	165 19.30 24.66 66.00	139 16.26 20.78 84.76	43 5.03 6.43 100.00	0 0.00 0.00 .	669 78.25
GED	0 0.00 0.00 0.00	21 2.46 36.21 5.90	33 3.86 56.90 13.20	4 0.47 6.90 2.44	0 0.00 0.00 0.00	0 0.00 0.00 .	58 6.78
NNHSG	3 0.35 2.91 7.14	28 3.27 27.18 7.87	52 6.08 50.49 20.80	20 2.34 19.42 12.20	0 0.00 0.00 0.00	0 0.00 0.00 .	103 12.05
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	42 4.91	356 41.64	250 29.24	164 19.18	43 5.03	0 0.00	855 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 22 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	5 2.08 83.33 11.11	1 0.42 16.67 1.96	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	6 2.50
HSDG	3 1.25 1.36 100.00	37 15.42 16.82 82.22	41 17.08 18.64 80.39	83 34.58 37.73 97.65	56 23.33 25.45 100.00	0 0.00 0.00 .	220 91.67
GED	0 0.00 0.00 0.00	2 0.83 40.00 4.44	3 1.25 60.00 5.88	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	5 2.08
NNHSG	0 0.00 0.00 0.00	1 0.42 11.11 2.22	6 2.50 66.67 11.76	2 0.83 22.22 2.35	0 0.00 0.00 0.00	0 0.00 0.00 .	9 3.75
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	3 1.25	45 18.75	51 21.25	85 35.42	56 23.33	0 0.00	240 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 23 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 4.35 100.00 9.09	0 0.00 0.00 0.00	0 0.00 0.00 .	2 4.35
HSDG	0 0.00 0.00 .	9 19.57 21.95 90.00	8 17.39 19.51 80.00	20 43.48 48.78 90.91	4 8.70 9.76 100.00	0 0.00 0.00 .	41 89.13
GED	0 0.00 0.00 .	1 2.17 100.00 10.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 2.17
NNHSG	0 0.00 0.00 .	0 0.00 0.00 0.00	2 4.35 100.00 20.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	2 4.35
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	10 21.74	10 21.74	22 47.83	4 8.70	0 0.00	46 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 24 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	1	1	1	0	0	4
	2.94	2.94	2.94	2.94	0.00	0.00	11.76
	25.00	25.00	25.00	25.00	0.00	0.00	
	50.00	12.50	10.00	9.09	0.00	.	
HSDG	1	6	7	10	3	0	27
	2.94	17.65	20.59	29.41	8.82	0.00	79.41
	3.70	22.22	25.93	37.04	11.11	0.00	
	50.00	75.00	70.00	90.91	100.00	.	
GED	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
NNHSG	0	1	2	0	0	0	3
	0.00	2.94	5.88	0.00	0.00	0.00	8.82
	0.00	33.33	66.67	0.00	0.00	0.00	
	0.00	12.50	20.00	0.00	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	2	8	10	11	3	0	34
	5.88	23.53	29.41	32.35	8.82	0.00	100.00

THIS IS FOR FISCAL YEAR 1983

TABLE 25 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 26 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	15 0.59 20.00 10.64	53 2.07 70.67 5.06	4 0.16 5.33 0.75	3 0.12 4.00 0.37	0 0.00 0.00 0.00	0 0.00 0.00 0.00	75 2.93
HSDG	119 4.64 7.14 84.40	803 31.33 48.20 76.70	335 13.07 20.11 63.09	392 15.29 23.53 48.70	3 0.12 0.18 75.00	14 0.55 0.84 40.00	1666 65.00
GED	7 0.27 0.85 4.96	190 7.41 23.17 18.15	191 7.45 23.29 35.97	410 16.00 50.00 50.93	1 0.04 0.12 25.00	21 0.82 2.56 60.00	820 31.99
NNHSG	0 0.00 0.00 0.00	1 0.04 50.00 0.10	1 0.04 50.00 0.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.08
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	141 5.50	1047 40.85	531 20.72	805 31.41	4 0.16	35 1.37	2563 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 27 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	9 1.32 40.91 9.00	10 1.47 45.45 6.41	2 0.29 9.09 0.49	0 0.00 0.00 .	1 0.15 4.55 8.33	22 3.23
HSDG	1 0.15 0.20 100.00	77 11.31 15.56 77.00	105 15.42 21.21 67.31	306 44.93 61.82 74.27	0 0.00 0.00 .	6 0.88 1.21 50.00	495 72.69
GED	0 0.00 0.00 0.00	13 1.91 7.98 13.00	41 6.02 25.15 26.28	104 15.27 63.80 25.24	0 0.00 0.00 .	5 0.73 3.07 41.67	163 23.94
NNHSG	0 0.00 0.00 0.00	1 0.15 100.00 1.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 0.00	1 0.15
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
TOTAL	1 0.15	100 14.68	156 22.91	412 60.50	0 0.00	12 1.76	681 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 28 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	1 0.94 33.33 7.69	1 0.94 33.33 4.00	1 0.94 33.33 1.49	0 0.00 0.00 .	0 0.00 0.00 0.00	3 2.83
HSDG	0 0.00 0.00 .	11 10.38 16.67 84.62	13 12.26 19.70 52.00	41 38.68 62.12 61.19	0 0.00 0.00 .	1 0.94 1.52 100.00	66 62.26
GED	0 0.00 0.00 .	1 0.94 2.70 7.69	11 10.38 29.73 44.00	25 23.58 67.57 37.31	0 0.00 0.00 .	0 0.00 0.00 0.00	37 34.91
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	13 12.26	25 23.58	67 63.21	0 0.00	1 0.94	106 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 29 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	1 1.15 50.00 3.57	1 1.15 50.00 5.88	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	2 2.30
HSDG	1 1.15 1.79 50.00	22 25.29 39.29 78.57	10 11.49 17.86 58.82	23 26.44 41.07 57.50	0 0.00 0.00 .	0 0.00 0.00 .	56 64.37
GED	1 1.15 3.45 50.00	5 5.75 17.24 17.86	6 6.90 20.69 35.29	17 19.54 58.62 42.50	0 0.00 0.00 .	0 0.00 0.00 .	29 33.33
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	2 2.30	28 32.18	17 19.54	40 45.98	0 0.00	0 0.00	87 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 30 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
GED	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 31 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	43 1.42 39.81 22.99	61 2.01 56.48 4.65	2 0.07 1.85 0.30	2 0.07 1.85 0.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	108 3.56
HSDG	134 4.42 6.33 71.66	1036 34.16 48.96 79.02	457 15.07 21.60 69.24	468 15.43 22.12 55.98	3 0.10 0.14 75.00	18 0.59 0.85 51.43	2116 69.77
GED	10 0.33 1.24 5.35	213 7.02 26.46 16.25	199 6.56 24.72 30.15	365 12.03 45.34 43.66	1 0.03 0.12 25.00	17 0.56 2.11 48.57	805 26.54
NNHSG	0 0.00 0.00 0.00	1 0.03 25.00 0.08	2 0.07 50.00 0.30	1 0.03 25.00 0.12	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 0.13
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	187 6.17	1311 43.22	660 21.76	836 27.56	4 0.13	35 1.15	3033 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 32 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=BLACK

EDLVL / TSC44 FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	14	7	12	0	0	34
	0.09	1.27	0.64	1.09	0.00	0.00	3.09
	2.94	41.18	20.59	35.29	0.00	0.00	
	11.11	7.25	2.79	1.90	0.00	0.00	
HSDG	7	143	192	479	3	6	830
	0.64	13.00	17.45	43.55	0.27	0.55	75.45
	0.84	17.23	23.13	57.71	0.36	0.72	
	77.78	74.09	76.49	75.91	75.00	50.00	
GED	1	36	52	140	1	6	236
	0.09	3.27	4.73	12.73	0.09	0.55	21.45
	0.42	15.25	22.03	59.32	0.42	2.54	
	11.11	18.65	20.72	22.19	25.00	50.00	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	9	193	251	631	4	12	1100
	0.82	17.55	22.82	57.36	0.36	1.09	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 33 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 1.03 22.22 100.00	0 0.00 0.00 0.00	1 0.51 11.11 1.92	6 3.08 66.67 5.88	0 0.00 0.00 .	0 0.00 0.00 0.00	9 4.62
HSDG	0 0.00 0.00 0.00	30 15.38 21.28 81.08	41 21.03 29.08 78.85	70 35.90 49.65 68.63	0 0.00 0.00 .	0 0.00 0.00 0.00	141 72.31
GED	0 0.00 0.00 0.00	7 3.59 15.56 18.92	10 5.13 22.22 19.23	26 13.33 57.78 25.49	0 0.00 0.00 .	2 1.03 4.44 100.00	45 23.08
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
TOTAL	2 1.03	37 18.97	52 26.67	102 52.31	0 0.00	2 1.03	195 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 34 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.90 25.00 20.00	3 2.70 75.00 10.34	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 0.00	4 3.60
HSDG	2 1.80 2.60 40.00	19 17.12 24.68 65.52	11 9.91 14.29 73.33	43 38.74 55.84 71.67	0 0.00 0.00 .	2 1.80 2.60 100.00	77 69.37
GED	2 1.80 6.67 40.00	7 6.31 23.33 24.14	4 3.60 13.33 26.67	17 15.32 56.67 28.33	0 0.00 0.00 .	0 0.00 0.00 0.00	30 27.03
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
TOTAL	5 4.50	29 26.13	15 13.51	60 54.05	0 0.00	2 1.80	111 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 35 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
GED	0 0.00 0.00 .	1 50.00 50.00 100.00	0 0.00 0.00 .	1 50.00 50.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	2 100.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 50.00	0 0.00	1 50.00	0 0.00	0 0.00	2 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 36 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	13 0.62 23.21 16.25	38 1.80 67.86 5.48	2 0.09 3.57 0.41	3 0.14 5.36 0.37	0 0.00 0.00 0.00	0 0.00 0.00 0.00	56 2.65
HSDG	64 3.03 5.88 80.00	463 21.92 42.52 66.81	249 11.79 22.87 50.82	299 14.16 27.46 36.78	5 0.24 0.46 71.43	9 0.43 0.83 31.03	1089 51.56
GED	3 0.14 0.31 3.75	192 9.09 19.90 27.71	239 11.32 24.77 48.78	509 24.10 52.75 62.61	2 0.09 0.21 28.57	20 0.95 2.07 68.97	965 45.69
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.09 100.00 0.25	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 0.09
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	80 3.79	693 32.81	490 23.20	813 38.49	7 0.33	29 1.37	2112 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 37 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	3 0.58 42.86 4.29	3 0.58 42.86 2.40	1 0.19 14.29 0.32	0 0.00 0.00 0.00	0 0.00 0.00 0.00	7 1.36
HSDG	2 0.39 0.56 100.00	56 10.92 15.82 80.00	91 17.74 25.71 72.80	200 38.99 56.50 64.72	1 0.19 0.28 100.00	4 0.78 1.13 66.67	354 69.01
GED	0 0.00 0.00 0.00	11 2.14 7.24 15.71	31 6.04 20.39 24.80	108 21.05 71.05 34.95	0 0.00 0.00 0.00	2 0.39 1.32 33.33	152 29.63
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	2 0.39	70 13.65	125 24.37	309 60.23	1 0.19	6 1.17	513 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 38 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL / FREQUENCY, PERCENT, ROW PCT, COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	1	1	2	0	0	4
	0.00	1.59	1.59	3.17	0.00	0.00	6.35
	0.00	25.00	25.00	50.00	0.00	0.00	
	.	14.29	6.25	5.13	.	0.00	
HSDG	0	5	8	23	0	0	36
	0.00	7.94	12.70	36.51	0.00	0.00	57.14
	0.00	13.89	22.22	63.89	0.00	0.00	
	.	71.43	50.00	58.97	.	0.00	
GED	0	1	7	14	0	1	23
	0.00	1.59	11.11	22.22	0.00	1.59	36.51
	0.00	4.35	30.43	60.87	0.00	4.35	
	.	14.29	43.75	35.90	.	100.00	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	.	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	.	0.00	
TOTAL	0	7	16	39	0	1	63
	0.00	11.11	25.40	61.90	0.00	1.59	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 39 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	.	.	
HSDG	0	10	6	14	0	0	30
	0.00	20.00	12.00	28.00	0.00	0.00	60.00
	0.00	33.33	20.00	46.67	0.00	0.00	
	.	90.91	40.00	58.33	.	.	
GED	0	1	9	10	0	0	20
	0.00	2.00	18.00	20.00	0.00	0.00	40.00
	0.00	5.00	45.00	50.00	0.00	0.00	
	.	9.09	60.00	41.67	.	.	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	.	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	.	.	
TOTAL	0	11	15	24	0	0	50
	0.00	22.00	30.00	48.00	0.00	0.00	100.00

TABLE 40 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 41 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	64	103	3	2	0	3	175
	4.56	7.33	0.21	0.14	0.00	0.21	12.46
	36.57	58.86	1.71	1.14	0.00	1.71	
	37.21	14.84	1.28	0.72	.	10.71	
HSDG	105	504	171	156	0	16	952
	7.47	35.87	12.17	11.10	0.00	1.14	67.76
	11.03	52.94	17.96	16.39	0.00	1.68	
	61.05	72.62	72.77	56.52	.	57.14	
GED	3	87	61	118	0	9	278
	0.21	6.19	4.34	8.40	0.00	0.64	19.79
	1.08	31.29	21.94	42.45	0.00	3.24	
	1.74	12.54	25.96	42.75	.	32.14	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	.	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	.	0.00	
TOTAL	172	694	235	276	0	28	1405
	12.24	49.40	16.73	19.64	0.00	1.99	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 42 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	10	2	3	0	1	16
	0.00	2.75	0.55	0.82	0.00	0.27	4.40
	0.00	62.50	12.50	18.75	0.00	6.25	
	0.00	12.05	2.33	1.60	.	25.00	
HSDG	4	59	73	155	0	2	293
	1.10	16.21	20.05	42.58	0.00	0.55	80.49
	1.37	20.14	24.91	52.90	0.00	0.68	
	100.00	71.08	84.88	82.89	.	50.00	
GED	0	14	11	29	0	1	55
	0.00	3.85	3.02	7.97	0.00	0.27	15.11
	0.00	25.45	20.00	52.73	0.00	1.82	
	0.00	16.87	12.79	15.51	.	25.00	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	.	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	.	0.00	
TOTAL	4	83	86	187	0	4	364
	1.10	22.80	23.63	51.37	0.00	1.10	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 43 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	5 5.68 83.33 17.24	1 1.14 16.67 4.00	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	6 6.82
HSDG	0 0.00 0.00 .	18 20.45 30.00 62.07	16 18.18 26.67 64.00	26 29.55 43.33 76.47	0 0.00 0.00 .	0 0.00 0.00 .	60 68.18
GED	0 0.00 0.00 .	6 6.82 27.27 20.69	8 9.09 36.36 32.00	8 9.09 36.36 23.53	0 0.00 0.00 .	0 0.00 0.00 .	22 25.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	29 32.95	25 28.41	34 38.64	0 0.00	0 0.00	88 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 44 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=OTHER

EDLVL	TSC44						
FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	4	0	4	0	0	9
	2.70	10.81	0.00	10.81	0.00	0.00	24.32
	11.11	44.44	0.00	44.44	0.00	0.00	
	100.00	36.36	0.00	25.00	.	0.00	
HSDG	0	5	6	6	0	1	18
	0.00	13.51	16.22	16.22	0.00	2.70	48.65
	0.00	27.78	33.33	33.33	0.00	5.56	
	0.00	45.45	75.00	37.50	.	100.00	
GED	0	2	2	6	0	0	10
	0.00	5.41	5.41	16.22	0.00	0.00	27.03
	0.00	20.00	20.00	60.00	0.00	0.00	
	0.00	18.18	25.00	37.50	.	0.00	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	.	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	.	0.00	
TOTAL	1	11	8	16	0	1	37
	2.70	29.73	21.62	43.24	0.00	2.70	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 45 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 46 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 1.05 50.00 20.00	1 1.05 50.00 2.94	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 2.11
HSDG	4 4.21 6.45 80.00	26 27.37 41.94 76.47	12 12.63 19.35 63.16	13 13.68 20.97 43.33	3 3.16 4.84 100.00	4 4.21 6.45 100.00	62 65.26
GED	0 0.00 0.00 0.00	7 7.37 22.58 20.59	7 7.37 22.58 36.84	17 17.89 54.84 56.67	0 0.00 0.00 0.00	0 0.00 0.00 0.00	31 32.63
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	5 5.26	34 35.79	19 20.00	30 31.58	3 3.16	4 4.21	95 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 47 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	1 4.55 100.00 25.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 4.55
HSDG	0 0.00 0.00 .	3 13.64 18.75 75.00	5 22.73 31.25 100.00	6 27.27 37.50 54.55	2 9.09 12.50 100.00	0 0.00 0.00 .	16 72.73
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	0 0.00 0.00 0.00	5 22.73 100.00 45.45	0 0.00 0.00 0.00	0 0.00 0.00 .	5 22.73
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	4 18.18	5 22.73	11 50.00	2 9.09	0 0.00	22 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 48 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 25.00 33.33 100.00	1 25.00 33.33 50.00	1 25.00 33.33 100.00	0 0.00 0.00 .	0 0.00 0.00 .	3 75.00
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	1 25.00 100.00 50.00	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	1 25.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 25.00	2 50.00	1 25.00	0 0.00	0 0.00	4 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 49 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 33.33 100.00 33.33	0 0.00 0.00 .	0 0.00 0.00 .	1 33.33
GED	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	2 66.67 100.00 66.67	0 0.00 0.00 .	0 0.00 0.00 .	2 66.67
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	0 0.00	0 0.00	3 100.00	0 0.00	0 0.00	3 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

TABLE 50 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
AFQT44	144803	56.48	20.71	0	99.00	99.00	36.66
GT80	144803	104.72	13.67	0	130.00	130.00	13.05

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
SPSTT=ETS							
AFQT44	57026	57.97	21.12	0	99.00	99.00	36.44
GT80	57026	105.69	13.73	0	130.00	130.00	12.99
SPSTT=REUP							
AFQT44	30669	53.69	20.40	0	99.00	99.00	37.99
GT80	30669	102.76	13.90	0	130.00	130.00	13.53
SPSTT=ATTRIT							
AFQT44	44087	55.12	19.66	0	99.00	99.00	35.66
GT80	44087	104.05	12.86	0	130.00	130.00	12.36
SPSTT=STILL IN							
AFQT44	11722	61.48	21.81	0	99.00	99.00	35.47
GT80	11722	107.59	14.75	0	130.00	130.00	13.71
SPSTT=BAD DATA							
AFQT44	1299	58.08	20.37	0	98.00	98.00	35.07
GT80	1299	105.38	14.15	0	130.00	130.00	13.43

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
PS=NPS							
AFQT44	132168	56.26	20.72	0	99.00	99.00	36.83
GT80	132168	104.60	13.27	0	130.00	130.00	12.69
PS=PS							
AFQT44	12635	58.79	20.46	0	99.00	99.00	34.80
GT80	12635	105.93	17.25	0	130.00	130.00	16.28

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1983

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
PS=NPS SPSTT=ETS							
AFQT44	53588	57.95	21.17	4.00	99.00	95.00	36.53
GT80	53588	105.69	13.47	0.00	130.00	130.00	12.75
PS=NPS SPSTT=REUP							
AFQT44	26228	52.80	20.33	0	99.00	99.00	38.51
GT80	26228	102.19	13.33	0	130.00	130.00	13.05
PS=NPS SPSTT=ATTRIT							
AFQT44	41349	55.10	19.68	4.00	99.00	95.00	35.71
GT80	41349	104.06	12.57	59.00	130.00	71.00	12.08
PS=NPS SPSTT=STILL IN							
AFQT44	9828	60.93	21.75	12.00	99.00	87.00	35.69
GT80	9828	107.33	13.75	64.00	130.00	66.00	12.81
PS=NPS SPSTT=BAD DATA							
AFQT44	1175	58.34	20.21	15.00	98.00	83.00	34.64
GT80	1175	105.67	12.98	70.00	130.00	60.00	12.28
PS=PS SPSTT=ETS							
AFQT44	3438	58.31	20.40	0	99.00	99.00	34.99
GT80	3438	105.69	17.26	0	130.00	130.00	16.33
PS=PS SPSTT=REUP							
AFQT44	4441	58.95	20.00	0	99.00	99.00	33.92
GT80	4441	106.12	16.48	0	130.00	130.00	15.53
PS=PS SPSTT=ATTRIT							
AFQT44	2738	55.43	19.34	0	99.00	99.00	34.89
GT80	2738	104.00	16.55	0	130.00	130.00	15.91
PS=PS SPSTT=STILL IN							
AFQT44	1894	64.33	21.89	0	99.00	99.00	34.03
GT80	1894	108.94	19.07	0	130.00	130.00	17.51
PS=PS SPSTT=BAD DATA							
AFQT44	124	55.60	21.74	0	95.00	95.00	39.11
GT80	124	102.64	22.30	0	128.00	128.00	21.73

SEVERAL PERTINENT STAT[illegible]ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

PS	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
NPS	131937	92.5	131937	92.5
PS	10672	7.5	142609	100.0

SPSTT	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
ETS	39986	28.0	39986	28.0
REUP	22169	15.5	62155	43.6
ATTRIT	41363	29.0	103518	72.6
STILL IN	38136	26.7	141654	99.3
BAD DATA	955	0.7	142609	100.0

TSC44	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
I	4985	3.5	4985	3.5
II	48069	33.7	53054	37.2
IIIA	37147	26.0	90201	63.3
IIIB	38837	27.2	129038	90.5
IV	13478	9.5	142516	99.9
UNKNOWN	93	0.1	142609	100.0

MC44	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
I-IIIA	90201	63.3	90201	63.3
IIIB	38837	27.2	129038	90.5
IV	13478	9.5	142516	99.9
UNKNOWN	93	0.1	142609	100.0

EDLVL	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
COL GRAD	3794	2.7	3794	2.7
HSDG	123359	86.5	127153	89.2
GED	7195	5.0	134348	94.2
NNHSG	8260	5.8	142608	100.0
UNKNOWN	1	0.0	142609	100.0

SEVERAL PERTINENT STATI..ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

HSGRAD	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
HS GRAD	127153	89.2	127153	89.2
NON HSG	15455	10.8	142608	100.0
UNKNOWN	1	0.0	142609	100.0

RETHGP	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
WHITE	101248	71.0	101248	71.0
BLACK	31822	22.3	133070	93.3
HISAPNIC	5144	3.6	138214	96.9
OTHER	4392	3.1	142606	100.0
UNKNOWN	3	0.0	142609	100.0

SEX	FREQUENCY	PERCENT	CUMULATIVE FREQUENCY	CUMULATIVE PERCENT
MALE	124690	87.4	124690	87.4
FEMALE	17919	12.6	142609	100.0

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	900 0.89 33.35 18.99	1606 1.59 59.50 3.84	148 0.15 5.48 0.54	37 0.04 1.37 0.17	5 0.00 0.19 0.09	3 0.00 0.11 4.23	2699 2.67
HSDG	3678 3.63 4.31 77.61	35034 34.60 41.01 83.87	20789 20.53 24.33 75.57	20411 20.16 23.89 94.20	5476 5.41 6.41 99.80	46 0.05 0.05 64.79	85434 84.38
GED	90 0.09 1.53 1.90	2192 2.16 37.33 5.25	2363 2.33 40.24 8.59	1200 1.19 20.44 5.54	5 0.00 0.09 0.09	22 0.02 0.37 30.99	5872 5.80
NNHSG	71 0.07 0.98 1.50	2940 2.90 40.60 7.04	4210 4.16 58.13 15.30	20 0.02 0.28 0.09	1 0.00 0.01 0.02	0 0.00 0.00 0.00	7242 7.15
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00 100.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00
TOTAL	4739 4.68	41772 41.26	27511 27.17	21668 21.40	5487 5.42	71 0.07	101248 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	17	326	195	151	17	1	707
	0.05	1.02	0.61	0.47	0.05	0.00	2.22
	2.40	46.11	27.58	21.36	2.40	0.14	
	15.45	7.64	2.70	1.10	0.26	5.56	
HSDG	89	3565	6154	13246	6475	11	29540
	0.28	11.20	19.34	41.63	20.35	0.03	92.83
	0.30	12.07	20.83	44.84	21.92	0.04	
	80.91	83.59	85.22	96.59	99.71	61.11	
GED	1	163	423	312	1	6	906
	0.00	0.51	1.33	0.98	0.00	0.02	2.85
	0.11	17.99	46.69	34.44	0.11	0.66	
	0.91	3.82	5.86	2.28	0.02	33.33	
NNHSG	3	211	449	5	1	0	669
	0.01	0.66	1.41	0.02	0.00	0.00	2.10
	0.45	31.54	67.12	0.75	0.15	0.00	
	2.73	4.95	6.22	0.04	0.02	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	110	4265	7221	13714	6494	18	31822
	0.35	13.40	22.69	43.10	20.41	0.06	100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	14 0.27 7.11 32.56	63 1.22 31.98 7.03	54 1.05 27.41 4.04	53 1.03 26.90 2.66	13 0.25 6.60 1.49	0 0.00 0.00 0.00	197 3.83
HSDG	26 0.51 0.58 60.47	711 13.82 15.76 79.35	1065 20.70 23.61 79.78	1846 35.89 40.93 92.58	862 16.76 19.11 98.51	0 0.00 0.00 0.00	4510 87.67
GED	1 0.02 0.40 2.33	66 1.28 26.19 7.37	90 1.75 35.71 6.74	94 1.83 37.30 4.71	0 0.00 0.00 0.00	1 0.02 0.40 100.00	252 4.90
NNHSG	2 0.04 1.08 4.65	56 1.09 30.27 6.25	126 2.45 68.11 9.44	1 0.02 0.54 0.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	185 3.60
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	43 0.84	896 17.42	1335 25.95	1994 38.76	875 17.01	1 0.02	5144 100.00

SEVERAL PERTINENT STA1..,ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	17 0.39 8.95 18.28	84 1.91 44.21 7.40	46 1.05 24.21 4.27	34 0.77 17.89 2.33	9 0.20 4.74 1.45	0 0.00 0.00 0.00	190 4.33
HSDG	73 1.66 1.88 78.49	938 21.36 24.22 82.64	861 19.60 22.23 79.87	1386 31.56 35.79 94.87	613 13.96 15.83 98.55	2 0.05 0.05 66.67	3873 88.18
GED	0 0.00 0.00 0.00	52 1.18 31.52 4.58	71 1.62 43.03 6.59	41 0.93 24.85 2.81	0 0.00 0.00 0.00	1 0.02 0.61 33.33	165 3.76
NNHSG	3 0.07 1.83 3.23	61 1.39 37.20 5.37	100 2.28 60.98 9.28	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	164 3.73
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	93 2.12	1135 25.84	1078 24.54	1461 33.27	622 14.16	3 0.07	4392 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	0 0.00 0.00 0.00	1 33.33 100.00 50.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 33.33
HSDG	0 0.00 0.00 .	1 33.33 50.00 100.00	1 33.33 50.00 50.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	2 66.67
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 33.33	2 66.67	0 0.00	0 0.00	0 0.00	3 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE OF SPSTT BY MC44

SPSTT MC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	23493	11930	4544	19	39986
	16.47	8.37	3.19	0.01	28.04
	58.75	29.84	11.36	0.05	
	26.05	30.72	33.71	20.43	
REUP	11052	8087	3015	15	22169
	7.75	5.67	2.11	0.01	15.55
	49.85	36.48	13.60	0.07	
	12.25	20.82	22.37	16.13	
ATTRIT	26408	11095	3843	17	41363
	18.52	7.78	2.69	0.01	29.00
	63.84	26.82	9.29	0.04	
	29.28	28.57	28.51	18.28	
STILL IN	28662	7458	1980	36	38136
	20.10	5.23	1.39	0.03	26.74
	75.16	19.56	5.19	0.09	
	31.78	19.20	14.69	38.71	
BAD DATA	586	267	96	6	955
	0.41	0.19	0.07	0.00	0.67
	61.36	27.96	10.05	0.63	
	0.65	0.69	0.71	6.45	
TOTAL	90201	38837	13478	93	142609
	63.25	27.23	9.45	0.07	100.00

THIS IS FOR FISCAL YEAR 1984

TABLE OF SPSTT BY EDLVL

SPSTT / EDLVL FREQUENCY PERCENT ROW PCT COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	850 0.60 2.13 22.40	35635 24.99 89.12 28.89	1671 1.17 4.18 23.22	1829 1.28 4.57 22.14	1 0.00 0.00 100.00	39986 28.04
REUP	407 0.29 1.84 10.73	19570 13.72 88.28 15.86	1284 0.90 5.79 17.85	908 0.64 4.10 10.99	0 0.00 0.00 0.00	22169 15.55
ATTRIT	741 0.52 1.79 19.53	33069 23.19 79.95 26.81	3035 2.13 7.34 42.18	4518 3.17 10.92 54.70	0 0.00 0.00 0.00	41363 29.00
STILL IN	1773 1.24 4.65 46.73	34296 24.05 89.93 27.80	1142 0.80 2.99 15.87	925 0.65 2.43 11.20	0 0.00 0.00 0.00	38136 26.74
BAD DATA	23 0.02 2.41 0.61	789 0.55 82.62 0.64	63 0.04 6.60 0.88	80 0.06 8.38 0.97	0 0.00 0.00 0.00	955 0.67
TOTAL	3794 2.66	123359 86.50	7195 5.05	8260 5.79	1 0.00	142609 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE OF SPSTT BY HSGRAD

SPSTT HSGRAD

FREQUENCY PERCENT ROW PCT COL PCT	HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	36485 25.58 91.24 28.69	3500 2.45 8.75 22.65	1 0.00 0.00 100.00	39986 28.04
REUP	19977 14.01 90.11 15.71	2192 1.54 9.89 14.18	0 0.00 0.00 0.00	22169 15.55
ATTRIT	33810 23.71 81.74 26.59	7553 5.30 18.26 48.87	0 0.00 0.00 0.00	41363 29.00
STILL IN	36069 25.29 94.58 28.37	2067 1.45 5.42 13.37	0 0.00 0.00 0.00	38136 26.74
BAD DATA	812 0.57 85.03 0.64	143 0.10 14.97 0.93	0 0.00 0.00 0.00	955 0.67
TOTAL	127153 89.16	15455 10.84	1 0.00	142609 100.00

SEVERAL PERTINENT STAT...ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE OF SPSTT BY RETHGP

SPSTT RETHGP

FREQUENCY PERCENT ROW PCT COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	29283 20.53 73.23 28.92	7763 5.44 19.41 24.40	1571 1.10 3.93 30.54	1368 0.96 3.42 31.15	1 0.00 0.00 33.33	39986 28.04
REUP	12093 8.48 54.55 11.94	8333 5.84 37.59 26.19	1014 0.71 4.57 19.71	728 0.51 3.28 16.58	1 0.00 0.00 33.33	22169 15.55
ATTRIT	31355 21.99 75.80 30.97	7772 5.45 18.79 24.42	1158 0.81 2.80 22.51	1078 0.76 2.61 24.54	0 0.00 0.00 0.00	41363 29.00
STILL IN	27852 19.53 73.03 27.51	7730 5.42 20.27 24.29	1369 0.96 3.59 26.61	1184 0.83 3.10 26.96	1 0.00 0.00 33.33	38136 26.74
BAD DATA	665 0.47 69.63 0.66	224 0.16 23.46 0.70	32 0.02 3.35 0.62	34 0.02 3.56 0.77	0 0.00 0.00 0.00	955 0.67
TOTAL	101248 71.00	31822 22.31	5144 3.61	4392 3.08	3 0.00	142609 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE OF SPSTT BY SEX

SPSTT / SEX: FREQUENCY, PERCENT, ROW PCT, COL PCT	MALE	FEMALE	TOTAL
ETS	36223 25.40 90.59 29.05	3763 2.64 9.41 21.00	39986 28.04
REUP	19573 13.72 88.29 15.70	2596 1.82 11.71 14.49	22169 15.55
ATTRIT	34399 24.12 83.16 27.59	6964 4.88 16.84 38.86	41363 29.00
STILL IN	33666 23.61 88.28 27.00	4470 3.13 11.72 24.95	38136 26.74
BAD DATA	829 0.58 86.81 0.66	126 0.09 13.19 0.70	955 0.67
TOTAL	124690 87.43	17919 12.57	142609 100.00

SEVERAL PERTINENT STAT. .CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	172	367	36	8	1	1	585
	0.59	1.25	0.12	0.03	0.00	0.00	2.00
	29.40	62.74	6.15	1.37	0.17	0.17	
	13.45	3.13	0.52	0.11	0.05	7.69	
HSDG	1057	10129	5518	6937	2052	6	25699
	3.61	34.59	18.84	23.69	7.01	0.02	87.76
	4.11	39.41	21.47	26.99	7.98	0.02	
	82.64	86.29	79.03	96.13	99.90	46.15	
GED	32	556	547	266	1	6	1408
	0.11	1.90	1.87	0.91	0.00	0.02	4.81
	2.27	39.49	38.85	18.89	0.07	0.43	
	2.50	4.74	7.83	3.69	0.05	46.15	
NNHSG	18	687	880	5	0	0	1590
	0.06	2.35	3.01	0.02	0.00	0.00	5.43
	1.13	43.21	55.35	0.31	0.00	0.00	
	1.41	5.85	12.60	0.07	0.00	0.00	
UNKNOWN	0	0	1	0	0	0	1
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	100.00	0.00	0.00	0.00	
	0.00	0.00	0.01	0.00	0.00	0.00	
TOTAL	1279	11739	6982	7216	2054	13	29283
	4.37	40.09	23.84	24.64	7.01	0.04	100.00

SEVERAL PERTINENT STAT. .CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3 0.04 1.71 10.00	76 0.98 43.43 9.27	44 0.57 25.14 3.17	48 0.62 27.43 1.33	4 0.05 2.29 0.21	0 0.00 0.00 0.00	175 2.25
HSDG	25 0.32 0.34 83.33	673 8.67 9.25 82.07	1170 15.07 16.09 84.17	3498 45.06 48.10 96.95	1906 24.55 26.21 99.79	1 0.01 0.01 20.00	7273 93.69
GED	0 0.00 0.00 0.00	31 0.40 18.02 3.78	76 0.98 44.19 5.47	61 0.79 35.47 1.69	0 0.00 0.00 0.00	4 0.05 2.33 80.00	172 2.22
NNHSG	2 0.03 1.40 6.67	40 0.52 27.97 4.88	100 1.29 69.93 7.19	1 0.01 0.70 0.03	0 0.00 0.00 0.00	0 0.00 0.00 0.00	143 1.84
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	30 0.39	820 10.56	1390 17.91	3608 46.48	1910 24.60	5 0.06	7763 100.00

SEVERAL PERTINENT STAT. .CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	4 0.25 8.33 44.44	14 0.89 29.17 5.36	16 1.02 33.33 4.41	10 0.64 20.83 1.64	4 0.25 8.33 1.22	0 0.00 0.00 .	48 3.06
HSDG	4 0.25 0.28 44.44	209 13.30 14.84 80.08	283 18.01 20.10 77.96	588 37.43 41.76 96.39	324 20.62 23.01 98.78	0 0.00 0.00 .	1408 89.62
GED	0 0.00 0.00 0.00	18 1.15 32.73 6.90	26 1.65 47.27 7.16	11 0.70 20.00 1.80	0 0.00 0.00 0.00	0 0.00 0.00 .	55 3.50
NNHSG	1 0.06 1.67 11.11	20 1.27 33.33 7.66	38 2.42 63.33 10.47	1 0.06 1.67 0.16	0 0.00 0.00 0.00	0 0.00 0.00 .	60 3.82
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	9 0.57	261 16.61	363 23.11	610 38.83	328 20.88	0 0.00	1571 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	5 0.37 11.90 15.63	17 1.24 40.48 5.43	9 0.66 21.43 3.28	8 0.58 19.05 1.61	3 0.22 7.14 1.19	0 0.00 0.00 0.00	42 3.07
HSDG	27 1.97 2.15 84.38	273 19.96 21.77 87.22	228 16.67 18.18 83.21	476 34.80 37.96 95.97	249 18.20 19.86 98.81	1 0.07 0.08 100.00	1254 91.67
GED	0 0.00 0.00 0.00	8 0.58 22.22 2.56	16 1.17 44.44 5.84	12 0.88 33.33 2.42	0 0.00 0.00 0.00	0 0.00 0.00 0.00	36 2.63
NNHSG	0 0.00 0.00 0.00	15 1.10 41.67 4.79	21 1.54 58.33 7.66	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	36 2.63
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	32 2.34	313 22.88	274 20.03	496 36.26	252 18.42	1 0.07	1368 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ETS RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00

SEVERAL PERTINENT STAT. .ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 6 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	56 0.46 23.93 12.61	147 1.22 62.82 3.22	19 0.16 8.12 0.63	11 0.09 4.70 0.34	1 0.01 0.43 0.13	0 0.00 0.00 0.00	234 1.94
HSDG	370 3.06 3.64 83.33	3792 31.36 37.29 83.18	2232 18.46 21.95 73.74	2981 24.65 29.31 91.33	786 6.50 7.73 99.87	8 0.07 0.08 66.67	10169 84.09
GED	12 0.10 1.26 2.70	314 2.60 32.98 6.89	351 2.90 36.87 11.60	271 2.24 28.47 8.30	0 0.00 0.00 0.00	4 0.03 0.42 33.33	952 7.87
NNHSG	6 0.05 0.81 1.35	306 2.53 41.46 6.71	425 3.51 57.59 14.04	1 0.01 0.14 0.03	0 0.00 0.00 0.00	0 0.00 0.00 0.00	738 6.10
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	444 3.67	4559 37.70	3027 25.03	3264 26.99	787 6.51	12 0.10	12093 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 7 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	31	34	39	6	0	110
	0.00	0.37	0.41	0.47	0.07	0.00	1.32
	0.00	28.18	30.91	35.45	5.45	0.00	
	0.00	3.58	2.24	0.97	0.32	0.00	
HSDG	8	753	1308	3907	1892	3	7871
	0.10	9.04	15.70	46.89	22.70	0.04	94.46
	0.10	9.57	16.62	49.64	24.04	0.04	
	100.00	86.95	86.22	96.71	99.63	100.00	
GED	0	36	100	94	1	0	231
	0.00	0.43	1.20	1.13	0.01	0.00	2.77
	0.00	15.58	43.29	40.69	0.43	0.00	
	0.00	4.16	6.59	2.33	0.05	0.00	
NNHSG	0	46	75	0	0	0	121
	0.00	0.55	0.90	0.00	0.00	0.00	1.45
	0.00	38.02	61.98	0.00	0.00	0.00	
	0.00	5.31	4.94	0.00	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	8	866	1517	4040	1899	3	8333
	0.10	10.39	18.20	48.48	22.79	0.04	100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 8 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=HISAPNIC

EDLVL / TSC44 (FREQUENCY / PERCENT / ROW PCT / COL PCT)	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.20 6.45 66.67	10 0.99 32.26 7.81	4 0.39 12.90 2.11	14 1.38 45.16 2.77	1 0.10 3.23 0.53	0 0.00 0.00 .	31 3.06
HSDG	1 0.10 0.11 33.33	100 9.86 11.19 78.13	152 14.99 17.00 80.00	454 44.77 50.78 89.90	187 18.44 20.92 99.47	0 0.00 0.00 .	894 88.17
GED	0 0.00 0.00 0.00	10 0.99 15.87 7.81	16 1.58 25.40 8.42	37 3.65 58.73 7.33	0 0.00 0.00 0.00	0 0.00 0.00 .	63 6.21
NNHSG	0 0.00 0.00 0.00	8 0.79 30.77 6.25	18 1.78 69.23 9.47	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	26 2.56
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	3 0.30	128 12.62	190 18.74	505 49.80	188 18.54	0 0.00	1014 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 9 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	12 1.65 37.50 8.39	8 1.10 25.00 5.03	10 1.37 31.25 3.60	2 0.27 6.25 1.42	0 0.00 0.00 .	32 4.40
HSDG	6 0.82 0.94 85.71	109 14.97 17.17 76.22	123 16.90 19.37 77.36	258 35.44 40.63 92.81	139 19.09 21.89 98.58	0 0.00 0.00 .	635 87.23
GED	0 0.00 0.00 0.00	15 2.06 39.47 10.49	13 1.79 34.21 8.18	10 1.37 26.32 3.60	0 0.00 0.00 0.00	0 0.00 0.00 .	38 5.22
NNHSG	1 0.14 4.35 14.29	7 0.96 30.43 4.90	15 2.06 65.22 9.43	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	23 3.16
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	7 0.96	143 19.64	159 21.84	278 38.19	141 19.37	0 0.00	728 100.00

SEVERAL PERTINENT STAT...ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 10 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=REUP RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
GED	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	1 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 11 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	160 0.51 31.43 16.81	286 0.91 56.19 2.46	47 0.15 9.23 0.48	13 0.04 2.55 0.18	3 0.01 0.59 0.16	0 0.00 0.00 0.00	509 1.62
HSDG	723 2.31 2.98 75.95	8782 28.01 36.24 75.39	6159 19.64 25.42 63.36	6659 21.24 27.48 93.62	1903 6.07 7.85 99.74	5 0.02 0.02 35.71	24231 77.28
GED	32 0.10 1.25 3.36	979 3.12 38.33 8.40	1101 3.51 43.11 11.33	431 1.37 16.88 6.06	2 0.01 0.08 0.10	9 0.03 0.35 64.29	2554 8.15
NNHSG	37 0.12 0.91 3.89	1601 5.11 39.42 13.74	2413 7.70 59.42 24.83	10 0.03 0.25 0.14	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4061 12.95
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	952 3.04	11648 37.15	9720 31.00	7113 22.69	1908 6.09	14 0.04	31355 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 12 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1 0.01 0.72 7.69	65 0.84 47.10 6.16	41 0.53 29.71 2.13	28 0.36 20.29 0.88	3 0.04 2.17 0.19	0 0.00 0.00 0.00	138 1.78
HSDG	11 0.14 0.16 84.62	831 10.69 11.92 78.69	1477 19.00 21.18 76.85	3063 39.41 43.93 96.14	1589 20.45 22.79 99.75	1 0.01 0.01 50.00	6972 89.71
GED	0 0.00 0.00 0.00	64 0.82 18.77 6.06	184 2.37 53.96 9.57	92 1.18 26.98 2.89	0 0.00 0.00 0.00	1 0.01 0.29 50.00	341 4.39
NNHSG	1 0.01 0.31 7.69	96 1.24 29.91 9.09	220 2.83 68.54 11.45	3 0.04 0.93 0.09	1 0.01 0.31 0.06	0 0.00 0.00 0.00	321 4.13
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	13 0.17	1056 13.59	1922 24.73	3186 40.99	1593 20.50	2 0.03	7772 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 13 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3	14	12	15	2	0	46
	0.26	1.21	1.04	1.30	0.17	0.00	3.97
	6.52	30.43	26.09	32.61	4.35	0.00	
	33.33	7.45	3.83	3.33	1.02	.	
HSDG	5	131	224	417	195	0	972
	0.43	11.31	19.34	36.01	16.84	0.00	83.94
	0.51	13.48	23.05	42.90	20.06	0.00	
	55.56	69.68	71.57	92.46	98.98	.	
GED	1	26	32	19	0	0	78
	0.09	2.25	2.76	1.64	0.00	0.00	6.74
	1.28	33.33	41.03	24.36	0.00	0.00	
	11.11	13.83	10.22	4.21	0.00	.	
NNHSG	0	17	45	0	0	0	62
	0.00	1.47	3.89	0.00	0.00	0.00	5.35
	0.00	27.42	72.58	0.00	0.00	0.00	
	0.00	9.04	14.38	0.00	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	9	188	313	451	197	0	1158
	0.78	16.23	27.03	38.95	17.01	0.00	100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 14 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3 0.28 6.25 20.00	18 1.67 37.50 6.69	15 1.39 31.25 4.95	9 0.83 18.75 2.61	3 0.28 6.25 2.07	0 0.00 0.00 0.00	48 4.45
HSDG	10 0.93 1.12 66.67	200 18.55 22.37 74.35	212 19.67 23.71 69.97	330 30.61 36.91 95.65	142 13.17 15.88 97.93	0 0.00 0.00 0.00	894 82.93
GED	0 0.00 0.00 0.00	22 2.04 35.48 8.18	33 3.06 53.23 10.89	6 0.56 9.68 1.74	0 0.00 0.00 0.00	1 0.09 1.61 100.00	62 5.75
NNHSG	2 0.19 2.70 13.33	29 2.69 39.19 10.78	43 3.99 58.11 14.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	74 6.86
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	15 1.39	269 24.95	303 28.11	345 32.00	145 13.45	1 0.09	1078 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 15 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=ATTRIT RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 16 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	507 1.82 37.39 24.90	797 2.86 58.78 5.88	46 0.17 3.39 0.61	5 0.02 0.37 0.13	0 0.00 0.00 0.00	1 0.00 0.07 3.45	1356 4.87
HSDG	1506 5.41 6.07 73.97	12116 43.50 48.86 89.36	6746 24.22 27.21 88.80	3709 13.32 14.96 94.21	694 2.49 2.80 100.00	25 0.09 0.10 86.21	24796 89.03
GED	13 0.05 1.42 0.64	326 1.17 35.67 2.40	351 1.26 38.40 4.62	221 0.79 24.18 5.61	0 0.00 0.00 0.00	3 0.01 0.33 10.34	914 3.28
NNHSG	10 0.04 1.27 0.49	320 1.15 40.71 2.36	454 1.63 57.76 5.98	2 0.01 0.25 0.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	786 2.82
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	2036 7.31	13559 48.68	7597 27.28	3937 14.14	694 2.49	29 0.10	27852 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 17 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	13	149	75	36	4	1	278
	0.17	1.93	0.97	0.47	0.05	0.01	3.60
	4.68	53.60	26.98	12.95	1.44	0.36	
	22.03	9.97	3.19	1.30	0.38	14.29	
HSDG	45	1286	2166	2680	1044	5	7226
	0.58	16.64	28.02	34.67	13.51	0.06	93.48
	0.62	17.80	29.98	37.09	14.45	0.07	
	76.27	86.08	92.21	96.65	99.62	71.43	
GED	1	31	58	57	0	1	148
	0.01	0.40	0.75	0.74	0.00	0.01	1.91
	0.68	20.95	39.19	38.51	0.00	0.68	
	1.69	2.07	2.47	2.06	0.00	14.29	
NNHSG	0	28	50	0	0	0	78
	0.00	0.36	0.65	0.00	0.00	0.00	1.01
	0.00	35.90	64.10	0.00	0.00	0.00	
	0.00	1.87	2.13	0.00	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL	59	1494	2349	2773	1048	7	7730
	0.76	19.33	30.39	35.87	13.56	0.09	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 18 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	5	24	22	14	6	0	71
	0.37	1.75	1.61	1.02	0.44	0.00	5.19
	7.04	33.80	30.99	19.72	8.45	0.00	
	22.73	7.62	4.81	3.37	3.77	.	
HSDG	16	269	398	375	153	0	1211
	1.17	19.65	29.07	27.39	11.18	0.00	88.46
	1.32	22.21	32.87	30.97	12.63	0.00	
	72.73	85.40	87.09	90.14	96.23	.	
GED	0	12	15	27	0	0	54
	0.00	0.88	1.10	1.97	0.00	0.00	3.94
	0.00	22.22	27.78	50.00	0.00	0.00	
	0.00	3.81	3.28	6.49	0.00	.	
NNHSG	1	10	22	0	0	0	33
	0.07	0.73	1.61	0.00	0.00	0.00	2.41
	3.03	30.30	66.67	0.00	0.00	0.00	
	4.55	3.17	4.81	0.00	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	22	315	457	416	159	0	1369
	1.61	23.01	33.38	30.39	11.61	0.00	100.00

SEVERAL PERTINENT STAT. .CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 19 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	9 0.76 13.43 23.68	37 3.13 55.22 9.23	14 1.18 20.90 4.19	7 0.59 10.45 2.11	0 0.00 0.00 0.00	0 0.00 0.00 .	67 5.66
HSDG	29 2.45 2.73 76.32	349 29.48 32.83 87.03	293 24.75 27.56 87.72	313 26.44 29.44 94.28	79 6.67 7.43 100.00	0 0.00 0.00 .	1063 89.78
GED	0 0.00 0.00 0.00	5 0.42 19.23 1.25	9 0.76 34.62 2.69	12 1.01 46.15 3.61	0 0.00 0.00 0.00	0 0.00 0.00 .	26 2.20
NNHSG	0 0.00 0.00 0.00	10 0.84 35.71 2.49	18 1.52 64.29 5.39	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	28 2.36
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	38 3.21	401 33.87	334 28.21	332 28.04	79 6.67	0 0.00	1184 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 20 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=STILL IN RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
HSDG	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
GED	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	1 100.00

SEVERAL PERTINENT STAT. ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 21 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=WHITE

EDLVL	FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	FREQUENCY	5	9	0	0	0	1	15
	PERCENT	0.75	1.35	0.00	0.00	0.00	0.15	2.26
	ROW PCT	33.33	60.00	0.00	0.00	0.00	6.67	
	COL PCT	17.86	3.37	0.00	0.00	0.00	33.33	
HSDG	FREQUENCY	22	215	134	125	41	2	539
	PERCENT	3.31	32.33	20.15	18.80	6.17	0.30	81.05
	ROW PCT	4.08	39.89	24.86	23.19	7.61	0.37	
	COL PCT	78.57	80.52	72.43	90.58	93.18	66.67	
GED	FREQUENCY	1	17	13	11	2	0	44
	PERCENT	0.15	2.56	1.95	1.65	0.30	0.00	6.62
	ROW PCT	2.27	38.64	29.55	25.00	4.55	0.00	
	COL PCT	3.57	6.37	7.03	7.97	4.55	0.00	
NNHSG	FREQUENCY	0	26	38	2	1	0	67
	PERCENT	0.00	3.91	5.71	0.30	0.15	0.00	10.08
	ROW PCT	0.00	38.81	56.72	2.99	1.49	0.00	
	COL PCT	0.00	9.74	20.54	1.45	2.27	0.00	
UNKNOWN	FREQUENCY	0	0	0	0	0	0	0
	PERCENT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	ROW PCT	.	.	.	.	.	.	
	COL PCT	0.00	0.00	0.00	0.00	0.00	0.00	
TOTAL		28	267	185	138	44	3	665
		4.21	40.15	27.82	20.75	6.62	0.45	100.00

SEVERAL PERTINENT STAT. .CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 22 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	5 2.23 83.33 17.24	1 0.45 16.67 2.33	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 2.68
HSDG	0 0.00 0.00 .	22 9.82 11.11 75.86	33 14.73 16.67 76.74	98 43.75 49.49 91.59	44 19.64 22.22 100.00	1 0.45 0.51 100.00	198 88.39
GED	0 0.00 0.00 .	1 0.45 7.14 3.45	5 2.23 35.71 11.63	8 3.57 57.14 7.48	0 0.00 0.00 0.00	0 0.00 0.00 0.00	14 6.25
NNHSG	0 0.00 0.00 .	1 0.45 16.67 3.45	4 1.79 66.67 9.30	1 0.45 16.67 0.93	0 0.00 0.00 0.00	0 0.00 0.00 0.00	6 2.68
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	29 12.95	43 19.20	107 47.77	44 19.64	1 0.45	224 100.00

SEVERAL PERTINENT STAT. .CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 23 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	1 3.13 100.00 25.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 3.13
HSDG	0 0.00 0.00 .	2 6.25 8.00 50.00	8 25.00 32.00 66.67	12 37.50 48.00 100.00	3 9.38 12.00 100.00	0 0.00 0.00 0.00	25 78.13
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	1 3.13 50.00 8.33	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 3.13 50.00 100.00	2 6.25
NNHSG	0 0.00 0.00 .	1 3.13 25.00 25.00	3 9.38 75.00 25.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	4 12.50
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	4 12.50	12 37.50	12 37.50	3 9.38	1 3.13	32 100.00

SEVERAL PERTINENT STAT. .ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 24 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 2.94 100.00 20.00	0 0.00 0.00 0.00	1 2.94
HSDG	1 2.94 3.70 100.00	7 20.59 25.93 77.78	5 14.71 18.52 62.50	9 26.47 33.33 90.00	4 11.76 14.81 80.00	1 2.94 3.70 100.00	27 79.41
GED	0 0.00 0.00 0.00	2 5.88 66.67 22.22	0 0.00 0.00 0.00	1 2.94 33.33 10.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 8.82
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 8.82 100.00 37.50	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 8.82
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	1 2.94	9 26.47	8 23.53	10 29.41	5 14.71	1 2.94	34 100.00

SEVERAL PERTINENT STAT.. ..CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 25 OF EDLVL BY TSC44
CONTROLLING FOR SPSTT=BAD DATA RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 1 OF SPSTT BY TSC44
CONTROLLING FOR PS=NPS

SPSTT / FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	1235 0.94 3.28 27.84	12319 9.34 32.73 27.81	8463 6.41 22.48 24.34	11083 8.40 29.44 31.69	4541 3.44 12.06 33.72	0 0.00 0.00 .	37641 28.53
REUP	338 0.26 1.76 7.62	4650 3.52 24.18 10.50	4242 3.22 22.06 12.20	6987 5.30 36.34 19.98	3012 2.28 15.66 22.37	0 0.00 0.00 .	19229 14.57
ATTRIT	912 0.69 2.33 20.56	12431 9.42 31.81 28.06	11723 8.89 29.99 33.72	10179 7.72 26.04 29.11	3840 2.91 9.82 28.52	0 0.00 0.00 .	39085 29.62
STILL IN	1926 1.46 5.48 43.42	14629 11.09 41.62 33.03	10121 7.67 28.79 29.11	6496 4.92 18.48 18.57	1978 1.50 5.63 14.69	0 0.00 0.00 .	35150 26.64
BAD DATA	25 0.02 3.00 0.56	266 0.20 31.97 0.60	220 0.17 26.44 0.63	227 0.17 27.28 0.65	94 0.07 11.30 0.70	0 0.00 0.00 .	832 0.63
TOTAL	4436 3.36	44295 33.57	34769 26.35	34972 26.51	13465 10.21	0 0.00	131937 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 2 OF SPSTT BY TSC44
CONTROLLING FOR PS=PS

SPSTT TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	115	815	546	847	3	19	2345
	1.08	7.64	5.12	7.94	0.03	0.18	21.97
	4.90	34.75	23.28	36.12	0.13	0.81	
	20.95	21.60	22.96	21.91	23.08	20.43	
REUP	124	1046	652	1100	3	15	2940
	1.16	9.80	6.11	10.31	0.03	0.14	27.55
	4.22	35.58	22.18	37.41	0.10	0.51	
	22.59	27.72	27.42	28.46	23.08	16.13	
ATTRIT	77	730	535	916	3	17	2278
	0.72	6.84	5.01	8.58	0.03	0.16	21.35
	3.38	32.05	23.49	40.21	0.13	0.75	
	14.03	19.34	22.50	23.70	23.08	18.28	
STILL IN	229	1140	617	962	2	36	2986
	2.15	10.68	5.78	9.01	0.02	0.34	27.98
	7.67	38.18	20.66	32.22	0.07	1.21	
	41.71	30.21	25.95	24.89	15.38	38.71	
BAD DATA	4	43	28	40	2	6	123
	0.04	0.40	0.26	0.37	0.02	0.06	1.15
	3.25	34.96	22.76	32.52	1.63	4.88	
	0.73	1.14	1.18	1.03	15.38	6.45	
TOTAL	549	3774	2378	3865	13	93	10672
	5.14	35.36	22.28	36.22	0.12	0.87	100.00

SEVERAL PERTINENT STAT. .CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 1 OF SPSTT BY MC44
CONTROLLING FOR PS=NPS

SPSTT MC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	22017 16.69 58.49 26.37	11083 8.40 29.44 31.69	4541 3.44 12.06 33.72	0 0.00 0.00 .	37641 28.53
REUP	9230 7.00 48.00 11.05	6987 5.30 36.34 19.98	3012 2.28 15.66 22.37	0 0.00 0.00 .	19229 14.57
ATTRIT	25066 19.00 64.13 30.02	10179 7.72 26.04 29.11	3840 2.91 9.82 28.52	0 0.00 0.00 .	39085 29.62
STILL IN	26676 20.22 75.89 31.95	6496 4.92 18.48 18.57	1978 1.50 5.63 14.69	0 0.00 0.00 .	35150 26.64
BAD DATA	511 0.39 61.42 0.61	227 0.17 27.28 0.65	94 0.07 11.30 0.70	0 0.00 0.00 .	832 0.63
TOTAL	83500 63.29	34972 26.51	13465 10.21	0 0.00	131937 100.00

SEVERAL PERTINENT STAT. .CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 2 OF SPSTT BY MC44
CONTROLLING FOR PS=PS

SPSTT MC44

FREQUENCY PERCENT ROW PCT COL PCT	I-IIIA	IIIB	IV	UNKNOWN	TOTAL
ETS	1476 13.83 62.94 22.03	847 7.94 36.12 21.91	3 0.03 0.13 23.08	19 0.18 0.81 20.43	2345 21.97
REUP	1822 17.07 61.97 27.19	1100 10.31 37.41 28.46	3 0.03 0.10 23.08	15 0.14 0.51 16.13	2940 27.55
ATTRIT	1342 12.57 58.91 20.03	916 8.58 40.21 23.70	3 0.03 0.13 23.08	17 0.16 0.75 18.28	2278 21.35
STILL IN	1986 18.61 66.51 29.64	962 9.01 32.22 24.89	2 0.02 0.07 15.38	36 0.34 1.21 38.71	2986 27.98
BAD DATA	75 0.70 60.98 1.12	40 0.37 32.52 1.03	2 0.02 1.63 15.38	6 0.06 4.88 6.45	123 1.15
TOTAL	6701 62.79	3865 36.22	13 0.12	93 0.87	10672 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 1 OF SPSTT BY EDLVL
CONTROLLING FOR PS=NPS

SPSTT EDLVL

FREQUENCY PERCENT ROW PCT COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	772 0.59 2.05 22.73	34083 25.83 90.55 29.31	956 0.72 2.54 24.03	1829 1.39 4.86 22.15	1 0.00 0.00 100.00	37641 28.53
REUP	336 0.25 1.75 9.89	17508 13.27 91.05 15.05	477 0.36 2.48 11.99	908 0.69 4.72 11.00	0 0.00 0.00 0.00	19229 14.57
ATTRIT	685 0.52 1.75 20.17	31888 24.17 81.59 27.42	1995 1.51 5.10 50.14	4517 3.42 11.56 54.70	0 0.00 0.00 0.00	39085 29.62
STILL IN	1585 1.20 4.51 46.67	32121 24.35 91.38 27.62	519 0.39 1.48 13.04	925 0.70 2.63 11.20	0 0.00 0.00 0.00	35150 26.64
BAD DATA	18 0.01 2.16 0.53	703 0.53 84.50 0.60	32 0.02 3.85 0.80	79 0.06 9.50 0.96	0 0.00 0.00 0.00	832 0.63
TOTAL	3396 2.57	116303 88.15	3979 3.02	8258 6.26	1 0.00	131937 100.00

SEVERAL PERTINENT STAT. .CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 2 OF SPSTT BY EDLVL
CONTROLLING FOR PS=PS

SPSTT EDLVL

FREQUENCY / PERCENT / ROW PCT / COL PCT	COL GRAD	HSDG	GED	NNHSG	UNKNOWN	TOTAL
ETS	78	1552	715	0	0	2345
	0.73	14.54	6.70	0.00	0.00	21.97
	3.33	66.18	30.49	0.00	0.00	
	19.60	22.00	22.23	0.00	.	
REUP	71	2062	807	0	0	2940
	0.67	19.32	7.56	0.00	0.00	27.55
	2.41	70.14	27.45	0.00	0.00	
	17.84	29.22	25.09	0.00	.	
ATTRIT	56	1181	1040	1	0	2278
	0.52	11.07	9.75	0.01	0.00	21.35
	2.46	51.84	45.65	0.04	0.00	
	14.07	16.74	32.34	50.00	.	
STILL IN	188	2175	623	0	0	2986
	1.76	20.38	5.84	0.00	0.00	27.98
	6.30	72.84	20.86	0.00	0.00	
	47.24	30.82	19.37	0.00	.	
BAD DATA	5	86	31	1	0	123
	0.05	0.81	0.29	0.01	0.00	1.15
	4.07	69.92	25.20	0.81	0.00	
	1.26	1.22	0.96	50.00	.	
TOTAL	398	7056	3216	2	0	10672
	3.73	66.12	30.13	0.02	0.00	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 1 OF SPSTT BY HSGRAD
CONTROLLING FOR PS=NPS

SPSTT HSGRAD

FREQUENCY / PERCENT / ROW PCT / COL PCT	HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	34855	2785	1	37641
	26.42	2.11	0.00	28.53
	92.60	7.40	0.00	
	29.12	22.76	100.00	
REUP	17844	1385	0	19229
	13.52	1.05	0.00	14.57
	92.80	7.20	0.00	
	14.91	11.32	0.00	
ATTRIT	32573	6512	0	39085
	24.69	4.94	0.00	29.62
	83.34	16.66	0.00	
	27.21	53.22	0.00	
STILL IN	33706	1444	0	35150
	25.55	1.09	0.00	26.64
	95.89	4.11	0.00	
	28.16	11.80	0.00	
BAD DATA	721	111	0	832
	0.55	0.08	0.00	0.63
	86.66	13.34	0.00	
	0.60	0.91	0.00	
TOTAL	119699	12237	1	131937
	90.72	9.27	0.00	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 2 OF SPSTT BY HSGRAD
CONTROLLING FOR PS=PS

SPSTT FREQUENCY PERCENT ROW PCT COL PCT	HSGRAD HS GRAD	NON HSG	UNKNOWN	TOTAL
ETS	1630 15.27 69.51 21.87	715 6.70 30.49 22.22	0 0.00 0.00 .	2345 21.97
REUP	2133 19.99 72.55 28.62	807 7.56 27.45 25.08	0 0.00 0.00 .	2940 27.55
ATTRIT	1237 11.59 54.30 16.60	1041 9.75 45.70 32.35	0 0.00 0.00 .	2278 21.35
STILL IN	2363 22.14 79.14 31.70	623 5.84 20.86 19.36	0 0.00 0.00 .	2986 27.98
BAD DATA	91 0.85 73.98 1.22	32 0.30 26.02 0.99	0 0.00 0.00 .	123 1.15
TOTAL	7454 69.85	3218 30.15	0 0.00	10672 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 1 OF SPSTT BY RETHGP
CONTROLLING FOR PS=NPS

SPSTT RETHGP

FREQUENCY PERCENT ROW PCT COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	27475 20.82 72.99 29.43	7368 5.58 19.57 24.73	1497 1.13 3.98 31.93	1300 0.99 3.45 31.72	1 0.00 0.00 33.33	37641 28.53
REUP	10057 7.62 52.30 10.77	7681 5.82 39.94 25.78	849 0.64 4.42 18.11	641 0.49 3.33 15.64	1 0.00 0.01 33.33	19229 14.57
ATTRIT	29578 22.42 75.68 31.68	7377 5.59 18.87 24.76	1088 0.82 2.78 23.21	1042 0.79 2.67 25.43	0 0.00 0.00 0.00	39085 29.62
STILL IN	25661 19.45 73.00 27.49	7170 5.43 20.40 24.07	1227 0.93 3.49 26.17	1091 0.83 3.10 26.62	1 0.00 0.00 33.33	35150 26.64
BAD DATA	585 0.44 70.31 0.63	196 0.15 23.56 0.66	27 0.02 3.25 0.58	24 0.02 2.88 0.59	0 0.00 0.00 0.00	832 0.63
TOTAL	93356 70.76	29792 22.58	4688 3.55	4098 3.11	3 0.00	131937 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 2 OF SPSTT BY RETHGP
CONTROLLING FOR PS=PS

SPSTT RETHGP

FREQUENCY PERCENT ROW PCT COL PCT	WHITE	BLACK	HISAPNIC	OTHER	UNKNOWN	TOTAL
ETS	1808 16.94 77.10 22.91	395 3.70 16.84 19.46	74 0.69 3.16 16.23	68 0.64 2.90 23.13	0 0.00 0.00 .	2345 21.97
REUP	2036 19.08 69.25 25.80	652 6.11 22.18 32.12	165 1.55 5.61 36.18	87 0.82 2.96 29.59	0 0.00 0.00 .	2940 27.55
ATTRIT	1777 16.65 78.01 22.52	395 3.70 17.34 19.46	70 0.66 3.07 15.35	36 0.34 1.58 12.24	0 0.00 0.00 .	2278 21.35
STILL IN	2191 20.53 73.38 27.76	560 5.25 18.75 27.59	142 1.33 4.76 31.14	93 0.87 3.11 31.63	0 0.00 0.00 .	2986 27.98
BAD DATA	80 0.75 65.04 1.01	28 0.26 22.76 1.38	5 0.05 4.07 1.10	10 0.09 8.13 3.40	0 0.00 0.00 .	123 1.15
TOTAL	7892 73.95	2030 19.02	456 4.27	294 2.75	0 0.00	10672 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 1 OF SPSTT BY SEX
CONTROLLING FOR PS=NPS

SPSTT	SEX		
FREQUENCY PERCENT ROW PCT COL PCT	MALE	FEMALE	TOTAL
ETS	33984 25.76 90.28 29.63	3657 2.77 9.72 21.20	37641 28.53
REUP	16789 12.73 87.31 14.64	2440 1.85 12.69 14.14	19229 14.57
ATTRIT	32303 24.48 82.65 28.17	6782 5.14 17.35 39.31	39085 29.62
STILL IN	30889 23.41 87.88 26.93	4261 3.23 12.12 24.70	35150 26.64
BAD DATA	720 0.55 86.54 0.63	112 0.08 13.46 0.65	832 0.63
TOTAL	114685 86.92	17252 13.08	131937 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 2 OF SPSTT BY SEX
CONTROLLING FOR PS=PS

SPSTT / FREQUENCY / PERCENT / ROW PCT / COL PCT	SEX: MALE	FEMALE	TOTAL
ETS	2239 20.98 95.48 22.38	106 0.99 4.52 15.89	2345 21.97
REUP	2784 26.09 94.69 27.83	156 1.46 5.31 23.39	2940 27.55
ATTRIT	2096 19.64 92.01 20.95	182 1.71 7.99 27.29	2278 21.35
STILL IN	2777 26.02 93.00 27.76	209 1.96 7.00 31.33	2986 27.98
BAD DATA	109 1.02 88.62 1.09	14 0.13 11.38 2.10	123 1.15
TOTAL	10005 93.75	667 6.25	10672 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 1 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	155 0.56 29.52 13.26	328 1.19 62.48 2.98	34 0.12 6.48 0.52	7 0.03 1.33 0.10	1 0.00 0.19 0.05	0 0.00 0.00 .	525 1.91
HSDG	973 3.54 3.97 83.23	9589 34.90 39.09 87.06	5261 19.15 21.45 80.06	6655 24.22 27.13 99.81	2052 7.47 8.37 99.95	0 0.00 0.00 .	24530 89.28
GED	23 0.08 2.77 1.97	410 1.49 49.46 3.72	395 1.44 47.65 6.01	1 0.00 0.12 0.01	0 0.00 0.00 0.00	0 0.00 0.00 .	829 3.02
NNHSG	18 0.07 1.13 1.54	687 2.50 43.21 6.24	880 3.20 55.35 13.39	5 0.02 0.31 0.07	0 0.00 0.00 0.00	0 0.00 0.00 .	1590 5.79
UNKNOWN	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.00 100.00 0.02	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 0.00
TOTAL	1169 4.25	11014 40.09	6571 23.92	6668 24.27	2053 7.47	0 0.00	27475 100.00

SEVERAL PERTINENT STA1 ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 2 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3	69	41	46	4	0	163
	0.04	0.94	0.56	0.62	0.05	0.00	2.21
	1.84	42.33	25.15	28.22	2.45	0.00	
	10.71	9.03	3.17	1.36	0.21	.	
HSDG	23	630	1102	3327	1904	0	6986
	0.31	8.55	14.96	45.15	25.84	0.00	94.82
	0.33	9.02	15.77	47.62	27.25	0.00	
	82.14	82.46	85.16	98.61	99.79	.	
GED	0	25	51	0	0	0	76
	0.00	0.34	0.69	0.00	0.00	0.00	1.03
	0.00	32.89	67.11	0.00	0.00	0.00	
	0.00	3.27	3.94	0.00	0.00	.	
NNHSG	2	40	100	1	0	0	143
	0.03	0.54	1.36	0.01	0.00	0.00	1.94
	1.40	27.97	69.93	0.70	0.00	0.00	
	7.14	5.24	7.73	0.03	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	28	764	1294	3374	1908	0	7368
	0.38	10.37	17.56	45.79	25.90	0.00	100.00

SEVERAL PERTINENT STA CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 3 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	4 0.27 9.09 44.44	13 0.87 29.55 5.33	14 0.94 31.82 4.09	9 0.60 20.45 1.57	4 0.27 9.09 1.22	0 0.00 0.00 .	44 2.94
HSDG	4 0.27 0.29 44.44	200 13.36 14.70 81.97	269 17.97 19.76 78.65	564 37.68 41.44 98.26	324 21.64 23.81 98.78	0 0.00 0.00 .	1361 90.92
GED	0 0.00 0.00 0.00	11 0.73 34.38 4.51	21 1.40 65.63 6.14	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	32 2.14
NNHSG	1 0.07 1.67 11.11	20 1.34 33.33 8.20	38 2.54 63.33 11.11	1 0.07 1.67 0.17	0 0.00 0.00 0.00	0 0.00 0.00 .	60 4.01
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	9 0.60	244 16.30	342 22.85	574 38.34	328 21.91	0 0.00	1497 100.00

SEVERAL PERTINENT STA1 .CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 4 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	5	17	9	6	3	0	40
	0.38	1.31	0.69	0.46	0.23	0.00	3.08
	12.50	42.50	22.50	15.00	7.50	0.00	
	17.24	5.74	3.52	1.28	1.19	.	
HSDG	24	258	213	461	249	0	1205
	1.85	19.85	16.38	35.46	19.15	0.00	92.69
	1.99	21.41	17.68	38.26	20.66	0.00	
	82.76	87.16	83.20	98.72	98.81	.	
GED	0	6	13	0	0	0	19
	0.00	0.46	1.00	0.00	0.00	0.00	1.46
	0.00	31.58	68.42	0.00	0.00	0.00	
	0.00	2.03	5.08	0.00	0.00	.	
NNHSG	0	15	21	0	0	0	36
	0.00	1.15	1.62	0.00	0.00	0.00	2.77
	0.00	41.67	58.33	0.00	0.00	0.00	
	0.00	5.07	8.20	0.00	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	29	296	256	467	252	0	1300
	2.23	22.77	19.69	35.92	19.38	0.00	100.00

SEVERAL PERTINENT STA   ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 5 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ETS RETHGP=UNKNOWN

EDLVL   TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
GED	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	0 0.00	1 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 6 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	45 0.45 25.00 13.93	110 1.09 61.11 2.99	16 0.16 8.89 0.62	8 0.08 4.44 0.30	1 0.01 0.56 0.13	0 0.00 0.00 .	180 1.79
HSDG	267 2.65 3.04 82.66	3116 30.98 35.45 84.58	1957 19.46 22.26 75.59	2667 26.52 30.34 99.66	784 7.80 8.92 99.87	0 0.00 0.00 .	8791 87.41
GED	5 0.05 1.44 1.55	152 1.51 43.68 4.13	191 1.90 54.89 7.38	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	348 3.46
NNHSG	6 0.06 0.81 1.86	306 3.04 41.46 8.31	425 4.23 57.59 16.42	1 0.01 0.14 0.04	0 0.00 0.00 0.00	0 0.00 0.00 .	738 7.34
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	323 3.21	3684 36.63	2589 25.74	2676 26.61	785 7.81	0 0.00	10057 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 7 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	28 0.36 27.18 3.76	33 0.43 32.04 2.43	36 0.47 34.95 0.98	6 0.08 5.83 0.32	0 0.00 0.00 .	103 1.34
HSDG	7 0.09 0.10 100.00	646 8.41 8.77 86.71	1181 15.38 16.04 87.03	3638 47.36 49.40 99.02	1892 24.63 25.69 99.68	0 0.00 0.00 .	7364 95.87
GED	0 0.00 0.00 0.00	25 0.33 26.88 3.36	68 0.89 73.12 5.01	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	93 1.21
NNHSG	0 0.00 0.00 0.00	46 0.60 38.02 6.17	75 0.98 61.98 5.53	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	121 1.58
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	7 0.09	745 9.70	1357 17.67	3674 47.83	1898 24.71	0 0.00	7681 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 8 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=HISAPNIC

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 0.24 8.70 100.00	7 0.82 30.43 7.14	2 0.24 8.70 1.28	11 1.30 47.83 2.72	1 0.12 4.35 0.53	0 0.00 0.00 .	23 2.71
HSDG	0 0.00 0.00 0.00	77 9.07 9.82 78.57	126 14.84 16.07 80.77	394 46.41 50.26 97.28	187 22.03 23.85 99.47	0 0.00 0.00 .	784 92.34
GED	0 0.00 0.00 0.00	6 0.71 37.50 6.12	10 1.18 62.50 6.41	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	16 1.88
NNHSG	0 0.00 0.00 0.00	8 0.94 30.77 8.16	18 2.12 69.23 11.54	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	26 3.06
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	2 0.24	98 11.54	156 18.37	405 47.70	188 22.14	0 0.00	849 100.00

SEVERAL PERTINENT STA) .CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 9 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	11	8	9	2	0	30
	0.00	1.72	1.25	1.40	0.31	0.00	4.68
	0.00	36.67	26.67	30.00	6.67	0.00	
	0.00	8.94	5.76	3.88	1.42	.	
HSDG	5	94	107	223	139	0	568
	0.78	14.66	16.69	34.79	21.68	0.00	88.61
	0.88	16.55	18.84	39.26	24.47	0.00	
	83.33	76.42	76.98	96.12	98.58	.	
GED	0	11	9	0	0	0	20
	0.00	1.72	1.40	0.00	0.00	0.00	3.12
	0.00	55.00	45.00	0.00	0.00	0.00	
	0.00	8.94	6.47	0.00	0.00	.	
NNHSG	1	7	15	0	0	0	23
	0.16	1.09	2.34	0.00	0.00	0.00	3.59
	4.35	30.43	65.22	0.00	0.00	0.00	
	16.67	5.69	10.79	0.00	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	6	123	139	232	141	0	641
	0.94	19.19	21.68	36.19	22.00	0.00	100.00

SEVERAL PERTINENT STA1 .CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 10 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=REUP RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
GED	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	1 100.00

SEVERAL PERTINENT STA[illegible]CS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 11 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	144 0.49 30.84 16.42	265 0.90 56.75 2.40	42 0.14 8.99 0.45	13 0.04 2.78 0.20	3 0.01 0.64 0.16	0 0.00 0.00 .	467 1.58
HSDG	673 2.28 2.88 76.74	8364 28.28 35.81 75.90	5974 20.20 25.58 64.21	6442 21.78 27.58 99.55	1903 6.43 8.15 99.84	0 0.00 0.00 .	23356 78.96
GED	23 0.08 1.36 2.62	790 2.67 46.61 7.17	876 2.96 51.68 9.42	6 0.02 0.35 0.09	0 0.00 0.00 0.00	0 0.00 0.00 .	1695 5.73
NNHSG	37 0.13 0.91 4.22	1601 5.41 39.43 14.53	2412 8.15 59.41 25.92	10 0.03 0.25 0.15	0 0.00 0.00 0.00	0 0.00 0.00 .	4060 13.73
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	877 2.97	11020 37.26	9304 31.46	6471 21.88	1906 6.44	0 0.00	29578 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 12 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=BLACK

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	1	58	38	27	3	0	127
	0.01	0.79	0.52	0.37	0.04	0.00	1.72
	0.79	45.67	29.92	21.26	2.36	0.00	
	7.69	5.92	2.08	0.91	0.19	.	
HSDG	11	776	1416	2936	1588	0	6727
	0.15	10.52	19.19	39.80	21.53	0.00	91.19
	0.16	11.54	21.05	43.65	23.61	0.00	
	84.62	79.18	77.55	98.99	99.75	.	
GED	0	50	152	0	0	0	202
	0.00	0.68	2.06	0.00	0.00	0.00	2.74
	0.00	24.75	75.25	0.00	0.00	0.00	
	0.00	5.10	8.32	0.00	0.00	.	
NNHSG	1	96	220	3	1	0	321
	0.01	1.30	2.98	0.04	0.01	0.00	4.35
	0.31	29.91	68.54	0.93	0.31	0.00	
	7.69	9.80	12.05	0.10	0.06	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	13	980	1826	2966	1592	0	7377
	0.18	13.28	24.75	40.21	21.58	0.00	100.00

SEVERAL PERTINENT STA. .ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 13 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3 0.28 6.82 33.33	12 1.10 27.27 7.06	12 1.10 27.27 4.01	15 1.38 34.09 3.63	2 0.18 4.55 1.02	0 0.00 0.00 .	44 4.04
HSDG	5 0.46 0.54 55.56	121 11.12 12.97 71.18	215 19.76 23.04 71.91	397 36.49 42.55 96.13	195 17.92 20.90 98.98	0 0.00 0.00 .	933 85.75
GED	1 0.09 2.04 11.11	20 1.84 40.82 11.76	27 2.48 55.10 9.03	1 0.09 2.04 0.24	0 0.00 0.00 0.00	0 0.00 0.00 .	49 4.50
NNHSG	0 0.00 0.00 0.00	17 1.56 27.42 10.00	45 4.14 72.58 15.05	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	62 5.70
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	9 0.83	170 15.63	299 27.48	413 37.96	197 18.11	0 0.00	1088 100.00

SEVERAL PERTINENT STA. .ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 14 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3 0.29 6.38 23.08	17 1.63 36.17 6.51	15 1.44 31.91 5.10	9 0.86 19.15 2.74	3 0.29 6.38 2.07	0 0.00 0.00 .	47 4.51
HSDG	8 0.77 0.92 61.54	195 18.71 22.36 74.71	207 19.87 23.74 70.41	320 30.71 36.70 97.26	142 13.63 16.28 97.93	0 0.00 0.00 .	872 83.69
GED	0 0.00 0.00 0.00	20 1.92 40.82 7.66	29 2.78 59.18 9.86	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	49 4.70
NNHSG	2 0.19 2.70 15.38	29 2.78 39.19 11.11	43 4.13 58.11 14.63	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	74 7.10
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	13 1.25	261 25.05	294 28.21	329 31.57	145 13.92	0 0.00	1042 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 15 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=ATTRIT RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 16 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=WHITE

EDLVL   TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	443 1.73 37.16 24.30	706 2.75 59.23 5.61	40 0.16 3.36 0.56	3 0.01 0.25 0.09	0 0.00 0.00 0.00	0 0.00 0.00 .	1192 4.65
HSDG	1362 5.31 5.86 74.71	11355 44.25 48.84 90.25	6446 25.12 27.72 90.00	3395 13.23 14.60 99.82	693 2.70 2.98 100.00	0 0.00 0.00 .	23251 90.61
GED	8 0.03 1.85 0.44	201 0.78 46.53 1.60	222 0.87 51.39 3.10	1 0.00 0.23 0.03	0 0.00 0.00 0.00	0 0.00 0.00 .	432 1.68
NNHSG	10 0.04 1.27 0.55	320 1.25 40.71 2.54	454 1.77 57.76 6.34	2 0.01 0.25 0.06	0 0.00 0.00 0.00	0 0.00 0.00 .	786 3.06
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	1823 7.10	12582 49.03	7162 27.91	3401 13.25	693 2.70	0 0.00	25661 100.00

SEVERAL PERTINENT STA. .ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 17 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=BLACK

EDLVL TSC44

EDLVL / FREQUENCY, PERCENT, ROW PCT, COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	10	145	72	34	4	0	265
	0.14	2.02	1.00	0.47	0.06	0.00	3.70
	3.77	54.72	27.17	12.83	1.51	0.00	
	20.41	10.36	3.26	1.38	0.38	.	
HSDG	39	1207	2049	2428	1043	0	6766
	0.54	16.83	28.58	33.86	14.55	0.00	94.37
	0.58	17.84	30.28	35.89	15.42	0.00	
	79.59	86.21	92.67	98.58	99.62	.	
GED	0	20	40	1	0	0	61
	0.00	0.28	0.56	0.01	0.00	0.00	0.85
	0.00	32.79	65.57	1.64	0.00	0.00	
	0.00	1.43	1.81	0.04	0.00	.	
NNHSG	0	28	50	0	0	0	78
	0.00	0.39	0.70	0.00	0.00	0.00	1.09
	0.00	35.90	64.10	0.00	0.00	0.00	
	0.00	2.00	2.26	0.00	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	0.00	0.00	0.00	0.00	0.00	.	
TOTAL	49	1400	2211	2463	1047	0	7170
	0.68	19.53	30.84	34.35	14.60	0.00	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 18 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	5 0.41 7.81 22.73	20 1.63 31.25 7.30	20 1.63 31.25 4.72	13 1.06 20.31 3.74	6 0.49 9.38 3.77	0 0.00 0.00 .	64 5.22
HSDG	16 1.30 1.44 72.73	239 19.48 21.47 87.23	371 30.24 33.33 87.50	334 27.22 30.01 95.98	153 12.47 13.75 96.23	0 0.00 0.00 .	1113 90.71
GED	0 0.00 0.00 0.00	5 0.41 29.41 1.82	11 0.90 64.71 2.59	1 0.08 5.88 0.29	0 0.00 0.00 0.00	0 0.00 0.00 .	17 1.39
NNHSG	1 0.08 3.03 4.55	10 0.81 30.30 3.65	22 1.79 66.67 5.19	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	33 2.69
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	22 1.79	274 22.33	424 34.56	348 28.36	159 12.96	0 0.00	1227 100.00

SEVERAL PERTINENT STA. .ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 19 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	6 0.55 9.52 18.75	36 3.30 57.14 9.65	14 1.28 22.22 4.33	7 0.64 11.11 2.46	0 0.00 0.00 0.00	0 0.00 0.00 .	63 5.77
HSDG	26 2.38 2.62 81.25	324 29.70 32.69 86.86	285 26.12 28.76 88.24	277 25.39 27.95 97.54	79 7.24 7.97 100.00	0 0.00 0.00 .	991 90.83
GED	0 0.00 0.00 0.00	3 0.27 33.33 0.80	6 0.55 66.67 1.86	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	9 0.82
NNHSG	0 0.00 0.00 0.00	10 0.92 35.71 2.68	18 1.65 64.29 5.57	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	28 2.57
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	32 2.93	373 34.19	323 29.61	284 26.03	79 7.24	0 0.00	1091 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 20 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=STILL IN RETHGP=UNKNOWN

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00 100.00 100.00	0 0.00 0.00 .	0 0.00 0.00 .	0 0.00 0.00 .	1 100.00
HSDG	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
GED	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
NNHSG	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . .	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	0 0.00	1 100.00	0 0.00	0 0.00	0 0.00	1 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 21 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3 0.51 25.00 12.50	9 1.54 75.00 3.85	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	12 2.05
HSDG	20 3.42 4.15 83.33	185 31.62 38.38 79.06	119 20.34 24.69 72.12	117 20.00 24.27 97.50	41 7.01 8.51 97.62	0 0.00 0.00 .	482 82.39
GED	1 0.17 4.00 4.17	14 2.39 56.00 5.98	8 1.37 32.00 4.85	1 0.17 4.00 0.83	1 0.17 4.00 2.38	0 0.00 0.00 .	25 4.27
NNHSG	0 0.00 0.00 0.00	26 4.44 39.39 11.11	38 6.50 57.58 23.03	2 0.34 3.03 1.67	0 0.00 0.00 0.00	0 0.00 0.00 .	66 11.28
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	24 4.10	234 40.00	165 28.21	120 20.51	42 7.18	0 0.00	585 100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 22 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=BLACK

EDLVL / FREQUENCY, PERCENT, ROW PCT, COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	4	1	0	0	0	5
	0.00	2.04	0.51	0.00	0.00	0.00	2.55
	0.00	80.00	20.00	0.00	0.00	0.00	
	.	16.00	2.63	0.00	0.00	.	
HSDG	0	19	31	86	44	0	180
	0.00	9.69	15.82	43.88	22.45	0.00	91.84
	0.00	10.56	17.22	47.78	24.44	0.00	
	.	76.00	81.58	96.63	100.00	.	
GED	0	1	2	2	0	0	5
	0.00	0.51	1.02	1.02	0.00	0.00	2.55
	0.00	20.00	40.00	40.00	0.00	0.00	
	.	4.00	5.26	2.25	0.00	.	
NNHSG	0	1	4	1	0	0	6
	0.00	0.51	2.04	0.51	0.00	0.00	3.06
	0.00	16.67	66.67	16.67	0.00	0.00	
	.	4.00	10.53	1.12	0.00	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	.	
TOTAL	0	25	38	89	44	0	196
	0.00	12.76	19.39	45.41	22.45	0.00	100.00

SEVERAL PERTINENT STATISTICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 23 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL / FREQUENCY / PERCENT / ROW PCT / COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
HSDG	0 0.00 0.00 .	2 7.41 9.09 66.67	6 22.22 27.27 60.00	11 40.74 50.00 100.00	3 11.11 13.64 100.00	0 0.00 0.00 .	22 81.48
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	1 3.70 100.00 10.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 3.70
NNHSG	0 0.00 0.00 .	1 3.70 25.00 33.33	3 11.11 75.00 30.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	4 14.81
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	0 0.00	3 11.11	10 37.04	11 40.74	3 11.11	0 0.00	27 100.00

SEVERAL PERTINENT STAT..TICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 24 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 4.17 100.00 20.00	0 0.00 0.00 .	1 4.17
HSDG	1 4.17 5.26 100.00	3 12.50 15.79 75.00	4 16.67 21.05 57.14	7 29.17 36.84 100.00	4 16.67 21.05 80.00	0 0.00 0.00 .	19 79.17
GED	0 0.00 0.00 0.00	1 4.17 100.00 25.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	1 4.17
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	3 12.50 100.00 42.86	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	3 12.50
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00
TOTAL	1 4.17	4 16.67	7 29.17	7 29.17	5 20.83	0 0.00	24 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 25 OF EDLVL BY TSC44
CONTROLLING FOR PS=NPS SPSTT=BAD DATA RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 26 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	17 0.94 28.33 15.45	39 2.16 65.00 5.38	2 0.11 3.33 0.49	1 0.06 1.67 0.18	0 0.00 0.00 0.00	1 0.06 1.67 7.69	60 3.32
HSDG	84 4.65 7.19 76.36	540 29.87 46.19 74.48	257 14.21 21.98 62.53	282 15.60 24.12 51.46	0 0.00 0.00 0.00	6 0.33 0.51 46.15	1169 64.66
GED	9 0.50 1.55 8.18	146 8.08 25.22 20.14	152 8.41 26.25 36.98	265 14.66 45.77 48.36	1 0.06 0.17 100.00	6 0.33 1.04 46.15	579 32.02
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	110 6.08	725 40.10	411 22.73	548 30.31	1 0.06	13 0.72	1808 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 27 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=BLACK

EDLVL / TSC44 FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	7 1.77 58.33 12.50	3 0.76 25.00 3.13	2 0.51 16.67 0.85	0 0.00 0.00 0.00	0 0.00 0.00 0.00	12 3.04
HSDG	2 0.51 0.70 100.00	43 10.89 14.98 76.79	68 17.22 23.69 70.83	171 43.29 59.58 73.08	2 0.51 0.70 100.00	1 0.25 0.35 20.00	287 72.66
GED	0 0.00 0.00 0.00	6 1.52 6.25 10.71	25 6.33 26.04 26.04	61 15.44 63.54 26.07	0 0.00 0.00 0.00	4 1.01 4.17 80.00	96 24.30
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	2 0.51	56 14.18	96 24.30	234 59.24	2 0.51	5 1.27	395 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 28 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	1 1.35 25.00 5.88	2 2.70 50.00 9.52	1 1.35 25.00 2.78	0 0.00 0.00 .	0 0.00 0.00 .	4 5.41
HSDG	0 0.00 0.00 .	9 12.16 19.15 52.94	14 18.92 29.79 66.67	24 32.43 51.06 66.67	0 0.00 0.00 .	0 0.00 0.00 .	47 63.51
GED	0 0.00 0.00 .	7 9.46 30.43 41.18	5 6.76 21.74 23.81	11 14.86 47.83 30.56	0 0.00 0.00 .	0 0.00 0.00 .	23 31.08
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	17 22.97	21 28.38	36 48.65	0 0.00	0 0.00	74 100.00

SEVERAL PERTINENT STA...ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 29 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2 2.94 100.00 6.90	0 0.00 0.00 .	0 0.00 0.00 0.00	2 2.94
HSDG	3 4.41 6.12 100.00	15 22.06 30.61 88.24	15 22.06 30.61 83.33	15 22.06 30.61 51.72	0 0.00 0.00 .	1 1.47 2.04 100.00	49 72.06
GED	0 0.00 0.00 0.00	2 2.94 11.76 11.76	3 4.41 17.65 16.67	12 17.65 70.59 41.38	0 0.00 0.00 .	0 0.00 0.00 0.00	17 25.00
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
TOTAL	3 4.41	17 25.00	18 26.47	29 42.65	0 0.00	1 1.47	68 100.00

SEVERAL PERTINENT STA1...ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 30 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ETS RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 31 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	11 0.54 20.37 9.09	37 1.82 68.52 4.23	3 0.15 5.56 0.68	3 0.15 5.56 0.51	0 0.00 0.00 0.00	0 0.00 0.00 0.00	54 2.65
HSDG	103 5.06 7.47 85.12	676 33.20 49.06 77.26	275 13.51 19.96 62.79	314 15.42 22.79 53.40	2 0.10 0.15 100.00	8 0.39 0.58 66.67	1378 67.68
GED	7 0.34 1.16 5.79	162 7.96 26.82 18.51	160 7.86 26.49 36.53	271 13.31 44.87 46.09	0 0.00 0.00 0.00	4 0.20 0.66 33.33	604 29.67
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	121 5.94	875 42.98	438 21.51	588 28.88	2 0.10	12 0.59	2036 100.00

SEVERAL PERTINENT STA... .ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 32 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	3 0.46 42.86 2.48	1 0.15 14.29 0.63	3 0.46 42.86 0.82	0 0.00 0.00 0.00	0 0.00 0.00 0.00	7 1.07
HSDG	1 0.15 0.20 100.00	107 16.41 21.10 88.43	127 19.48 25.05 79.38	269 41.26 53.06 73.50	0 0.00 0.00 0.00	3 0.46 0.59 100.00	507 77.76
GED	0 0.00 0.00 0.00	11 1.69 7.97 9.09	32 4.91 23.19 20.00	94 14.42 68.12 25.68	1 0.15 0.72 100.00	0 0.00 0.00 0.00	138 21.17
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	1 0.15	121 18.56	160 24.54	366 56.13	1 0.15	3 0.46	652 100.00

SEVERAL PERTINENT STA...ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 33 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	3 1.82 37.50 10.00	2 1.21 25.00 5.88	3 1.82 37.50 3.00	0 0.00 0.00 .	0 0.00 0.00 .	8 4.85
HSDG	1 0.61 0.91 100.00	23 13.94 20.91 76.67	26 15.76 23.64 76.47	60 36.36 54.55 60.00	0 0.00 0.00 .	0 0.00 0.00 .	110 66.67
GED	0 0.00 0.00 0.00	4 2.42 8.51 13.33	6 3.64 12.77 17.65	37 22.42 78.72 37.00	0 0.00 0.00 .	0 0.00 0.00 .	47 28.48
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	1 0.61	30 18.18	34 20.61	100 60.61	0 0.00	0 0.00	165 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 34 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	1 1.15 50.00 5.00	0 0.00 0.00 0.00	1 1.15 50.00 2.17	0 0.00 0.00 .	0 0.00 0.00 .	2 2.30
HSDG	1 1.15 1.49 100.00	15 17.24 22.39 75.00	16 18.39 23.88 80.00	35 40.23 52.24 76.09	0 0.00 0.00 .	0 0.00 0.00 .	67 77.01
GED	0 0.00 0.00 0.00	4 4.60 22.22 20.00	4 4.60 22.22 20.00	10 11.49 55.56 21.74	0 0.00 0.00 .	0 0.00 0.00 .	18 20.69
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	1 1.15	20 22.99	20 22.99	46 52.87	0 0.00	0 0.00	87 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 35 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=REUP RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 36 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	16 0.90 38.10 21.33	21 1.18 50.00 3.34	5 0.28 11.90 1.20	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	42 2.36
HSDG	50 2.81 5.71 66.67	418 23.52 47.77 66.56	185 10.41 21.14 44.47	217 12.21 24.80 33.80	0 0.00 0.00 0.00	5 0.28 0.57 35.71	875 49.24
GED	9 0.51 1.05 12.00	189 10.64 22.00 30.10	225 12.66 26.19 54.09	425 23.92 49.48 66.20	2 0.11 0.23 100.00	9 0.51 1.05 64.29	859 48.34
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.06 100.00 0.24	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 0.06
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	75 4.22	628 35.34	416 23.41	642 36.13	2 0.11	14 0.79	1777 100.00

SEVERAL PERTINENT STA... .ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 37 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=BLACK

EDLVL / FREQUENCY, PERCENT, ROW PCT, COL PCT	TSC44: I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	7	3	1	0	0	11
	0.00	1.77	0.76	0.25	0.00	0.00	2.78
	0.00	63.64	27.27	9.09	0.00	0.00	
	.	9.21	3.13	0.45	0.00	0.00	
HSDG	0	55	61	127	1	1	245
	0.00	13.92	15.44	32.15	0.25	0.25	62.03
	0.00	22.45	24.90	51.84	0.41	0.41	
	.	72.37	63.54	57.73	100.00	50.00	
GED	0	14	32	92	0	1	139
	0.00	3.54	8.10	23.29	0.00	0.25	35.19
	0.00	10.07	23.02	66.19	0.00	0.72	
	.	18.42	33.33	41.82	0.00	50.00	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	0.00	0.00	
TOTAL	0	76	96	220	1	2	395
	0.00	19.24	24.30	55.70	0.25	0.51	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 38 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	2	0	0	0	0	2
	0.00	2.86	0.00	0.00	0.00	0.00	2.86
	0.00	100.00	0.00	0.00	0.00	0.00	
	.	11.11	0.00	0.00	.	.	
HSDG	0	10	9	20	0	0	39
	0.00	14.29	12.86	28.57	0.00	0.00	55.71
	0.00	25.64	23.08	51.28	0.00	0.00	
	.	55.56	64.29	52.63	.	.	
GED	0	6	5	18	0	0	29
	0.00	8.57	7.14	25.71	0.00	0.00	41.43
	0.00	20.69	17.24	62.07	0.00	0.00	
	.	33.33	35.71	47.37	.	.	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	.	.	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	.	.	
TOTAL	0	18	14	38	0	0	70
	0.00	25.71	20.00	54.29	0.00	0.00	100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 39 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 0.00	1 2.78 100.00 12.50	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 0.00	1 2.78
HSDG	2 5.56 9.09 100.00	5 13.89 22.73 62.50	5 13.89 22.73 55.56	10 27.78 45.45 62.50	0 0.00 0.00 .	0 0.00 0.00 0.00	22 61.11
GED	0 0.00 0.00 0.00	2 5.56 15.38 25.00	4 11.11 30.77 44.44	6 16.67 46.15 37.50	0 0.00 0.00 .	1 2.78 7.69 100.00	13 36.11
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
TOTAL	2 5.56	8 22.22	9 25.00	16 44.44	0 0.00	1 2.78	36 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 40 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=ATTRIT RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 41 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=WHITE

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	64 2.92 39.02 30.05	91 4.15 55.49 9.31	6 0.27 3.66 1.38	2 0.09 1.22 0.37	0 0.00 0.00 0.00	1 0.05 0.61 3.45	164 7.49
HSDG	144 6.57 9.32 67.61	761 34.73 49.26 77.89	300 13.69 19.42 68.97	314 14.33 20.32 58.58	1 0.05 0.06 100.00	25 1.14 1.62 86.21	1545 70.52
GED	5 0.23 1.04 2.35	125 5.71 25.93 12.79	129 5.89 26.76 29.66	220 10.04 45.64 41.04	0 0.00 0.00 0.00	3 0.14 0.62 10.34	482 22.00
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	213 9.72	977 44.59	435 19.85	536 24.46	1 0.05	29 1.32	2191 100.00

SEVERAL PERTINENT STA, ,ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 42 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3 0.54 23.08 30.00	4 0.71 30.77 4.26	3 0.54 23.08 2.17	2 0.36 15.38 0.65	0 0.00 0.00 0.00	1 0.18 7.69 14.29	13 2.32
HSDG	6 1.07 1.30 60.00	79 14.11 17.17 84.04	117 20.89 25.43 84.78	252 45.00 54.78 81.29	1 0.18 0.22 100.00	5 0.89 1.09 71.43	460 82.14
GED	1 0.18 1.15 10.00	11 1.96 12.64 11.70	18 3.21 20.69 13.04	56 10.00 64.37 18.06	0 0.00 0.00 0.00	1 0.18 1.15 14.29	87 15.54
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	10 1.79	94 16.79	138 24.64	310 55.36	1 0.18	7 1.25	560 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 43 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	4 2.82 57.14 9.76	2 1.41 28.57 6.06	1 0.70 14.29 1.47	0 0.00 0.00 .	0 0.00 0.00 .	7 4.93
HSDG	0 0.00 0.00 .	30 21.13 30.61 73.17	27 19.01 27.55 81.82	41 28.87 41.84 60.29	0 0.00 0.00 .	0 0.00 0.00 .	98 69.01
GED	0 0.00 0.00 .	7 4.93 18.92 17.07	4 2.82 10.81 12.12	26 18.31 70.27 38.24	0 0.00 0.00 .	0 0.00 0.00 .	37 26.06
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	0 0.00	41 28.87	33 23.24	68 47.89	0 0.00	0 0.00	142 100.00

SEVERAL PERTINENT STA[illegible]ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 44 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=OTHER

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	3 3.23 75.00 50.00	1 1.08 25.00 3.57	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 .	4 4.30
HSDG	3 3.23 4.17 50.00	25 26.88 34.72 89.29	8 8.60 11.11 72.73	36 38.71 50.00 75.00	0 0.00 0.00 .	0 0.00 0.00 .	72 77.42
GED	0 0.00 0.00 0.00	2 2.15 11.76 7.14	3 3.23 17.65 27.27	12 12.90 70.59 25.00	0 0.00 0.00 .	0 0.00 0.00 .	17 18.28
NNHSG	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . .	0 0.00
TOTAL	6 6.45	28 30.11	11 11.83	48 51.61	0 0.00	0 0.00	93 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 45 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=STILL IN RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

TABLE 46 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=WHITE

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	2 2.50 66.67 50.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.25 33.33 33.33	3 3.75
HSDG	2 2.50 3.51 50.00	30 37.50 52.63 90.91	15 18.75 26.32 75.00	8 10.00 14.04 44.44	0 0.00 0.00 0.00	2 2.50 3.51 66.67	57 71.25
GED	0 0.00 0.00 0.00	3 3.75 15.79 9.09	5 6.25 26.32 25.00	10 12.50 52.63 55.56	1 1.25 5.26 50.00	0 0.00 0.00 0.00	19 23.75
NNHSG	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	1 1.25 100.00 50.00	0 0.00 0.00 0.00	1 1.25
UNKNOWN	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00
TOTAL	4 5.00	33 41.25	20 25.00	18 22.50	2 2.50	3 3.75	80 100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 47 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=BLACK

EDLVL TSC44

FREQUENCY PERCENT ROW PCT COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0 0.00 0.00 .	1 3.57 100.00 25.00	0 0.00 0.00 0.00	0 0.00 0.00 0.00	0 0.00 0.00 .	0 0.00 0.00 0.00	1 3.57
HSDG	0 0.00 0.00 .	3 10.71 16.67 75.00	2 7.14 11.11 40.00	12 42.86 66.67 66.67	0 0.00 0.00 .	1 3.57 5.56 100.00	18 64.29
GED	0 0.00 0.00 .	0 0.00 0.00 0.00	3 10.71 33.33 60.00	6 21.43 66.67 33.33	0 0.00 0.00 .	0 0.00 0.00 0.00	9 32.14
NNHSG	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
UNKNOWN	0 0.00 . .	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . 0.00	0 0.00 . .	0 0.00 . 0.00	0 0.00
TOTAL	0 0.00	4 14.29	5 17.86	18 64.29	0 0.00	1 3.57	28 100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 48 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=HISAPNIC

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	1	0	0	0	0	1
	0.00	20.00	0.00	0.00	0.00	0.00	20.00
	0.00	100.00	0.00	0.00	0.00	0.00	
	.	100.00	0.00	0.00	.	0.00	
HSDG	0	0	2	1	0	0	3
	0.00	0.00	40.00	20.00	0.00	0.00	60.00
	0.00	0.00	66.67	33.33	0.00	0.00	
	.	0.00	100.00	100.00	.	0.00	
GED	0	0	0	0	0	1	1
	0.00	0.00	0.00	0.00	0.00	20.00	20.00
	0.00	0.00	0.00	0.00	0.00	100.00	
	.	0.00	0.00	0.00	.	100.00	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	.	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	.	0.00	
TOTAL	0	1	2	1	0	1	5
	0.00	20.00	40.00	20.00	0.00	20.00	100.00

FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

TABLE 49 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=OTHER

EDLVL TSC44

FREQUENCY / PERCENT / ROW PCT / COL PCT	I	II	IIIA	IIIB	IV	UNKNOWN	TOTAL
COL GRAD	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	.	0.00	
HSDG	0	4	1	2	0	1	8
	0.00	40.00	10.00	20.00	0.00	10.00	80.00
	0.00	50.00	12.50	25.00	0.00	12.50	
	.	80.00	100.00	66.67	.	100.00	
GED	0	1	0	1	0	0	2
	0.00	10.00	0.00	10.00	0.00	0.00	20.00
	0.00	50.00	0.00	50.00	0.00	0.00	
	.	20.00	0.00	33.33	.	0.00	
NNHSG	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	.	0.00	
UNKNOWN	0	0	0	0	0	0	0
	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	.	.	.	.	.	.	
	.	0.00	0.00	0.00	.	0.00	
TOTAL	0	5	1	3	0	1	10
	0.00	50.00	10.00	30.00	0.00	10.00	100.00

THIS IS FOR FISCAL YEAR 1984

TABLE 50 OF EDLVL BY TSC44
CONTROLLING FOR PS=PS SPSTT=BAD DATA RETHGP=UNKNOWN

EFFECTIVE SAMPLE SIZE = 0

SEVERAL PERTINENT STA ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
AFQT44	142609	57.11	20.14	0	99.00	99.00	35.26
GT80	142609	105.07	13.11	0	130.00	130.00	12.48

THIS IS FOR FISCAL YEAR 1984

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
SPSTT=ETS							
AFQT44	39986	56.04	20.67	0	99.00	99.00	36.87
GT80	39986	104.46	13.30	0	130.00	130.00	12.73
SPSTT=REUP							
AFQT44	22169	51.89	19.78	0	99.00	99.00	38.11
GT80	22169	101.56	13.20	0	130.00	130.00	12.99
SPSTT=ATTRIT							
AFQT44	41363	56.11	19.12	0	99.00	99.00	34.08
GT80	41363	104.60	12.40	0	130.00	130.00	11.85
SPSTT=STILL IN							
AFQT44	38136	62.36	19.71	0	99.00	99.00	31.60
GT80	38136	108.28	12.87	0	130.00	130.00	11.88
SPSTT=BAD DATA							
AFQT44	955	55.75	20.29	0	98.00	98.00	36.40
GT80	955	103.78	15.07	0	130.00	130.00	14.52

THIS IS FOR FISCAL YEAR 1984

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
PS=NPS							
AFQT44	131937	56.91	20.13	16.00	99.00	83.00	35.38
GT80	131937	104.93	12.88	68.00	130.00	62.00	12.28
PS=PS							
AFQT44	10672	59.59	20.01	0	99.00	99.00	33.59
GT80	10672	106.72	15.53	0	130.00	130.00	14.55

SEVERAL PERTINENT STA, ICS FOR TRADOC
FROM THE DMDC COHORT FILE AS OF 30SEP87

THIS IS FOR FISCAL YEAR 1984

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE	RANGE	C.V.
PS=NPS SPSTT=ETS							
AFQT44	37641	55.84	20.70	16.00	99.00	83.00	37.08
GT80	37641	104.32	13.16	69.00	130.00	61.00	12.62
PS=NPS SPSTT=REUP							
AFQT44	19229	50.75	19.58	20.00	99.00	79.00	38.58
GT80	19229	100.76	12.86	68.00	130.00	62.00	12.77
PS=NPS SPSTT=ATTRIT							
AFQT44	39085	56.04	19.13	20.00	99.00	79.00	34.14
GT80	39085	104.55	12.26	68.00	130.00	62.00	11.73
PS=NPS SPSTT=STILL IN							
AFQT44	35150	62.40	19.58	19.00	99.00	80.00	31.37
GT80	35150	108.33	12.43	70.00	130.00	60.00	11.48
PS=NPS SPSTT=BAD DATA							
AFQT44	832	55.60	19.89	21.00	98.00	77.00	35.78
GT80	832	104.09	12.75	74.00	130.00	56.00	12.25
PS=PS SPSTT=ETS							
AFQT44	2345	59.32	19.76	0	99.00	99.00	33.31
GT80	2345	106.77	15.12	0	130.00	130.00	14.16
PS=PS SPSTT=REUP							
AFQT44	2940	59.38	19.45	0	99.00	99.00	32.76
GT80	2940	106.75	14.13	0	130.00	130.00	13.24
PS=PS SPSTT=ATTRIT							
AFQT44	2278	57.28	18.95	0	99.00	99.00	33.08
GT80	2278	105.51	14.52	0	130.00	130.00	13.76
PS=PS SPSTT=STILL IN							
AFQT44	2986	61.88	21.16	0	99.00	99.00	34.20
GT80	2986	107.80	17.16	0	130.00	130.00	15.92
PS=PS SPSTT=BAD DATA							
AFQT44	123	56.73	22.89	0	98.00	98.00	40.34
GT80	123	101.69	25.74	0	130.00	130.00	25.31